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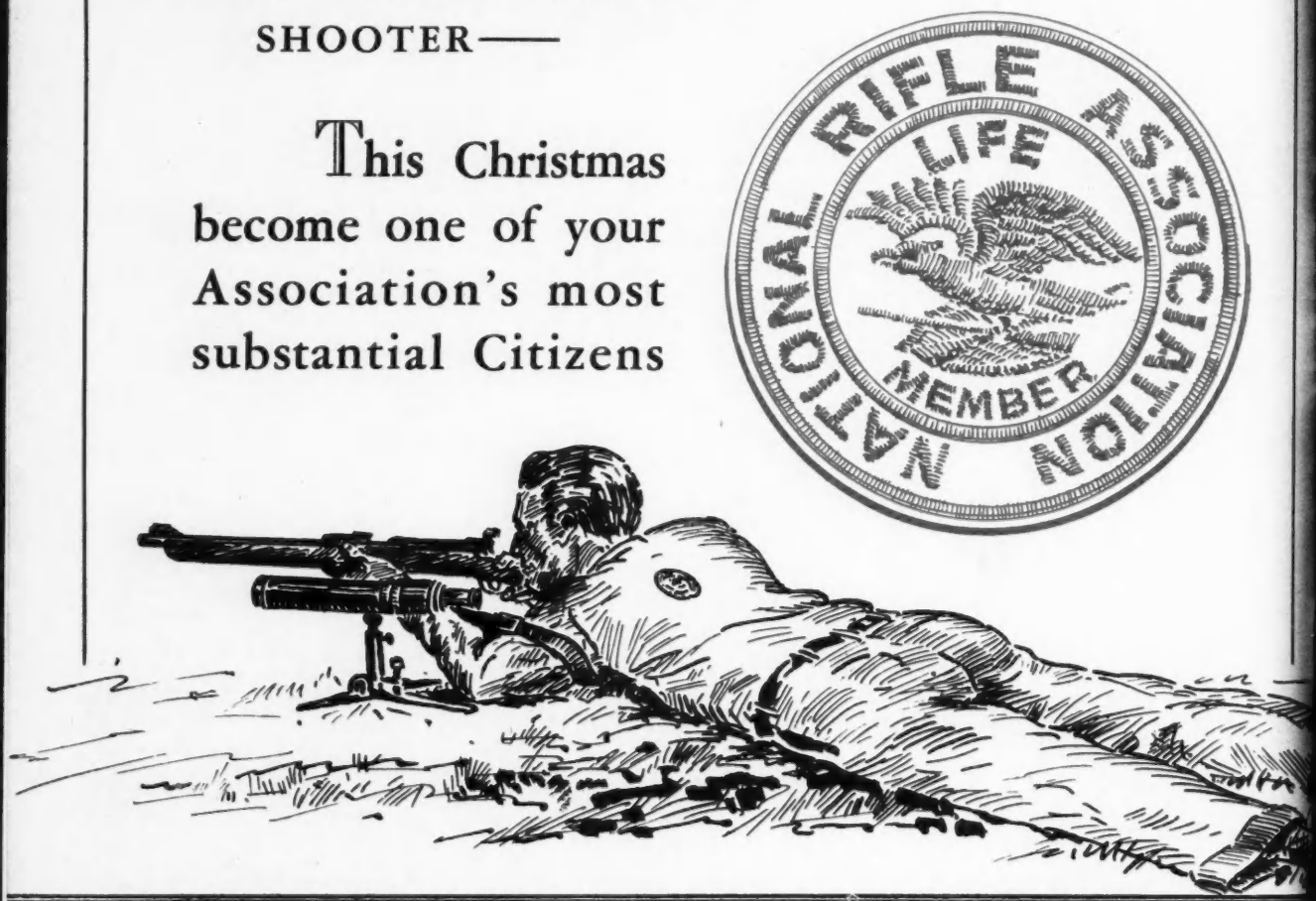

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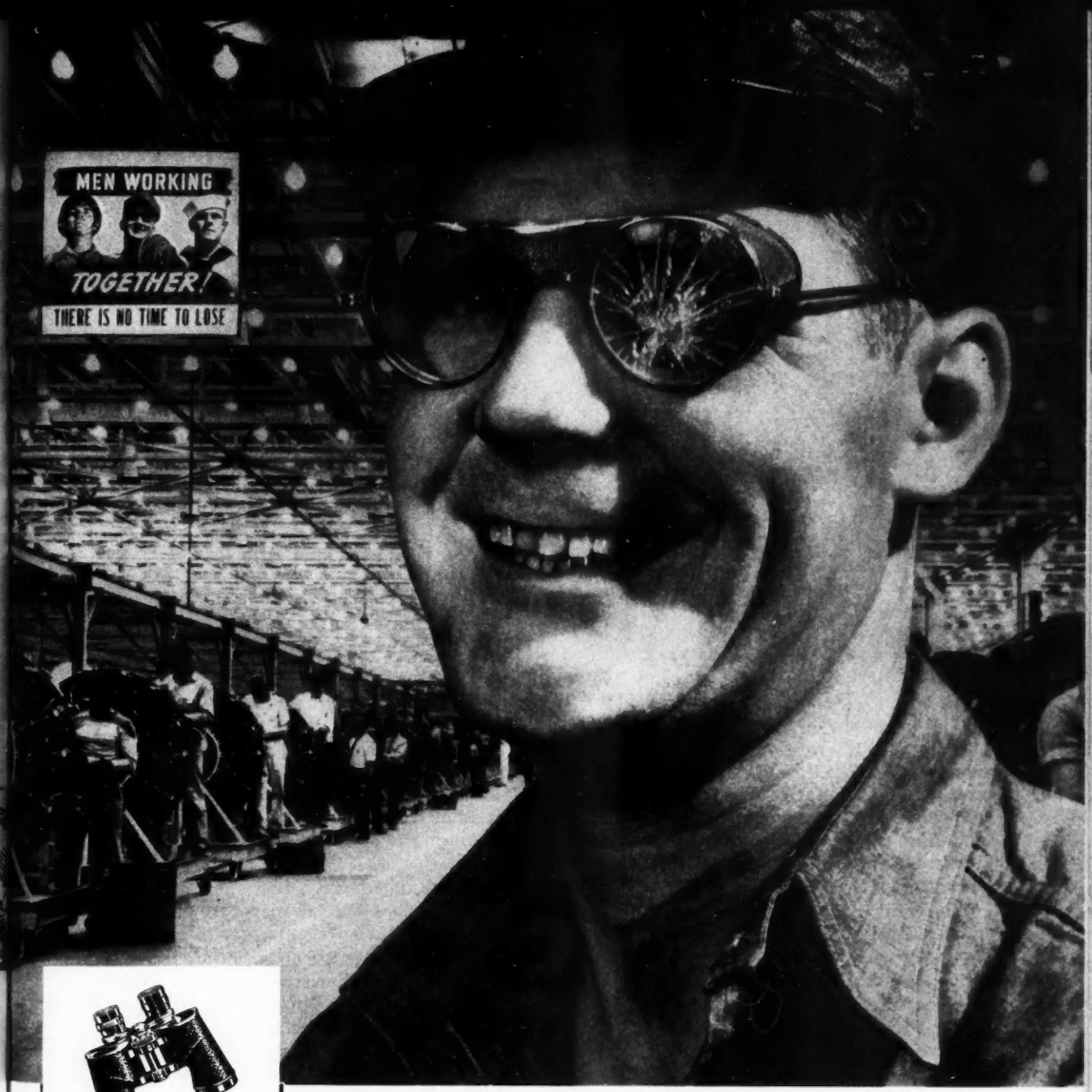

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The *Official Journal of The National Rifle Association of America*

AMERICAN RIFLEMAN

C. B. LISTER, *Managing Editor* W. F. SHADEL, *Editor*
F. C. NESS, *Technical Editor* F. C. DANIEL, *Advertising*
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THE COVER: Appropriate decoration for a military Christmas, is the ski-trooper in the environment of his training. Here is another American rifleman; trained for a particular task but grounded, nevertheless, in the fundamentals of straight shooting. Photo by U. S. Army Signal Corps.

THIS MONTH:

"Take Care of Our Guns, Dad," our opening article for this issue, came to us as a pleasant surprise and with it came this note: "I need not tell you of the bond which exists between fathers and the sons whom they have taught to shoot and to hunt. This year many of these boys are away in our Country's service . . . this separation will be felt very keenly in my own case and I know it will be in thousands of others. . . . For this reason I feel that the enclosed article may be a medium of telling these boys certain things which we would not or could not say to them in person." To the writer, Mr. Thomas, we are indebted for saying just what we wanted someone to say, and more than that, for saying it so well.

NEXT MONTH:

"Military Explosives," a three-part story covering the production steps of various types of propellants, initiators, boosters and high explosives, makes its appearance in our January issue. This timely story was prepared by Ordnance Advisory Specialist, J. B. Nealey, author of "High Explosive" in our November issue. In its thorough going treatment of explosive combinations, every powder-burner will find the basis for an understanding of such phenomena.

"Tooling up the Home Workshop," undoubtedly should have appeared in an earlier issue as a preface to a hobby the N. R. A. has been endeavoring to encourage. We were waiting, however, until we could secure the suggestions of so able an authority as Clyde Baker, noted before as author of "Modern Gunsmithing." He has now given us the first installment for this series, following his article this issue on inspecting and lapping rifle barrels.

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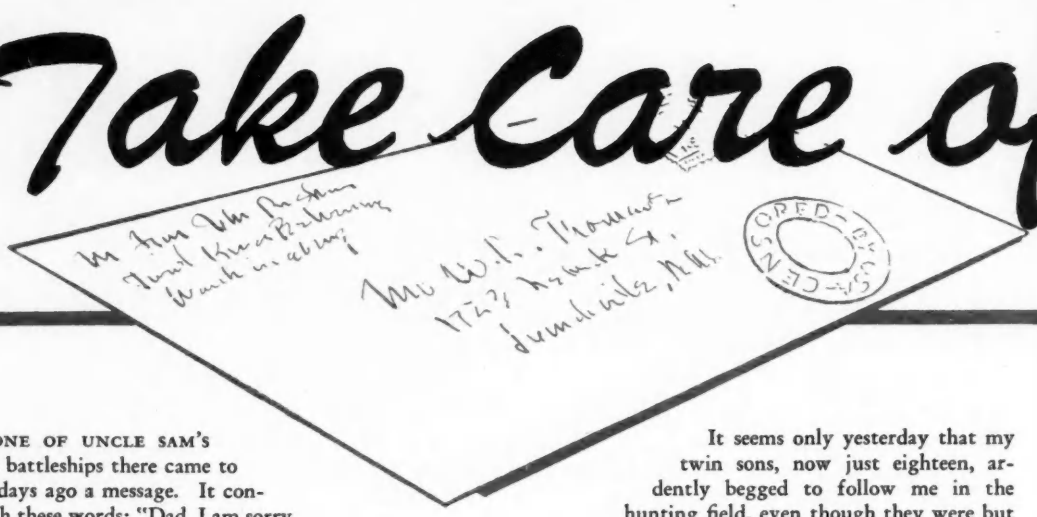
"Take Care of



FROM ONE OF UNCLE SAM'S newest battleships there came to me a few days ago a message. It concluded with these words: "Dad, I am sorry that I will not be with you this year. I like my new job, but the one thing that I will miss most will be my hunting. Maybe next year I will be back with you, but this year you will have to do without me. There are a flock of pheasants in Garr's cornfield and plenty of rabbits in Foster's woods. You should have some luck if you and the old Parker take a walk back that way. Please do."

From an old and renowned mid-western cavalry post there came another letter. This read in part: "Dad, you will have to hunt without me this year for I may be far away from old Pennsylvania when the hunting season comes in. I had a dream the other night. You and Sam and I were gunning in Davis' woods, and the birds were coming in from the Foulkrod field to the north, after being chased up by some 'city' gunners. We were in the 'hot corner' and were having plenty of luck, when all of a sudden I woke up and I knew it was not to be. Take good care of that new Winchester double of mine. It sure will knock down the pheasants if you point her straight."

And so, even though the shadow of war hangs heavy over our land, the first chill nights that presage the coming of fall bring with them the thought of the uppermost pleasures of other years. Even though there will be no more hunting till another bigger and more important job is done, there are thousands of good American boys in the Service, who, if at home, would now be cleaning and oiling their favorite smoothbores and deer rifles, and running the old setter or pointer or springer or the faithful old rabbit-hound afield. Their thoughts even now revert to hunting days.

I wonder if they realize that our hunting cannot mean much to us this year; to us who taught them the love of a good dog, a good gun and of the woods and fields when the tang of autumn is in the air. Boyishly, they probably do not understand that our hunting now is secondary, and that it cannot mean as much as it once did, until, God grant, they come home again to share it. Yet, I am sure that to fathers all over the Nation there are coming these forcibly cheerful, though unmistakably plaintive requests that we go afield as usual and get their share of game for them, and to try hard to imagine that they are walking alongside.

It seems only yesterday that my twin sons, now just eighteen, ardently begged to follow me in the hunting field, even though they were but seven years old at the time. But there were the dangers of what necessarily had to be snap-shooting in the brush. Only on one or two occasions when I knew that the day's hunting would follow the open fields were they allowed to accompany me that year, and then they held positions well in the rear.

That Christmas there arrived their first air rifles, to be used only when I was with them. The next year I selected a .22 caliber bolt action rifle for the purpose of teaching them shooting. On another Christmas, a few years later, I had the pleasure of giving them two little .410 gauge shotguns and shortening the stocks for them so they would fit properly. They were forbidden to go hunting with any 'teen-aged boys; only with me or with someone who had had many years experience, might they go in the field.

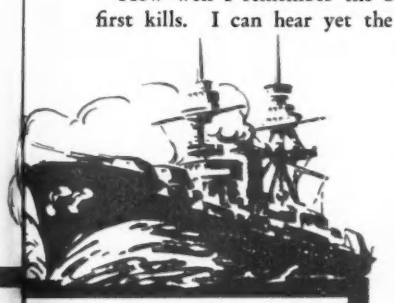
The next two years were spent in teaching them, above all, the value of careful gun handling afield and at all times; the type of spots which in my own experience had proven most likely to produce the most game; lessons in good sportsmanship and the proper respect for the rights of the farmer. They were taught that the hen pheasant zooming out

Your Guns, Dad

'TILL WE COME HOME AGAIN"

from beneath their feet should never at any time be shot at—because it was not only illegal game but because in the next season she probably would be responsible for rearing six or seven male birds to swell the home covers.

How well I remember the boyish enthusiasm of their first kills. I can hear yet the cry; "I got him, Dad!" I still remember every kill they made in their first two years afield. Vividly I see the fall of a pheasant in Hildabeitel's orchard at sunset, the four rabbits gathered that morning at Churchville, the pheasant that was stopped at the very top of the hill along the old Perkiomen Valley. Then there was that bleak November afternoon at Canby's farm. Each boy was walking a ridge alongside a narrow valley, and I was covering the valley floor. There was a sharp bark of a little .410. Looking up I saw silhouetted against the cold, leaden skyline, a boy hilariously jumping up and down, waving his gun overhead. Upon arriving on top of the ridge I beheld an odoriferous skunk lying dead at his feet! I wonder if he remembers that I carried that sweet-smelling animal home on the end of my gun barrel, so that he might prove to his friends that he was now a mighty hunter.



There comes before my eyes now the unending picture of the events of these joyous first years of their gunning. Among the good days were scattered those inevitable poor ones, when our coats held little at the day's end. I tried to teach them to take those days cheerfully, and that hunting, like life, was not just a succession of "red-letter" days; that the true hunter receives dividends through the appreciation of the very beauty of the woods and fields in the glorious autumn days.

* * * * * * *

To us, the fathers who have tried to pass our heritage on to you who are the soldiers, sailors and marines of today, the associations have been sweet. We hope that they have meant as much to you. The memory of those associations probably rests lightly with you now, but, viewed in retrospect in later years, they will loom up as some of the happiest moments of your lives.

While you are away we will not overshoot the covers of your old familiar hunting fields; we will do our best to see that they are well stocked against the day when you will be home again.

We have taught you what we can. Now yours is the big job that must be done. *You* must do it for *us* this time. Your country needs most of all now, the services of the millions of good, clean American youths who have learned to handle a gun and to cover rugged territory, or to handle the myriad types of arms of our proud fleet, and the coastal guns of our sacred shorelines. Be true; hold straight; hit hard; be steadfast in your purpose and be worthy of the faith that we have in you, and we will once more hunt together—you and your fathers who must now only wait and hope. We are betting heavily on you. Our thoughts will be with you every yard of the way, whether it be over desert's sands or the ocean's blue.

And so, to you, the sons of America who are away in your country's service, we, your fathers, promise that for your sakes we will hunt again this year. Memory will tell you that one of the happiest moments of a day afield comes when, tired and hungry, you top the last hill between you and home. In the valley below can be seen the flickering lights, where welcome and a good hot meal await you. This year as we top the hill and drop down to the valley below we will try hard to think that you have walked with us throughout the day.

Yes, we will take good care of your guns until you come home again. Good hunting and a safe return.

W. K. Thomas

GUERRILLA SCHOOL

By EDMUND WATERS

"THE FUNDAMENTALS of guerrilla tactics are surprise, invisibility, and caution. Men must be thoroughly grounded in these three essentials." So says Yank Levy in his book "Guerrilla Warfare." And Levy could have said one of the best schools for this training is the deer cover of North America, for these essentials apply equally well to the deer hunter. Caution, surprise, and invisibility are the three foundation stones of successful still hunting.

Consider the implication of the word "caution" for a moment. All day long the hunter moves as though his life depended on the next step. There is no letdown if the hunt is to be successful. He cannot let his mind wander for a moment. The next step, the next concealing piece of cover, may shelter the buck he is hunting. Nerves are being trained in this silent school where there is no sound save the wind whispering some ageless secret to the trees. He is being disciplined to concentrate for hours on end. He is learning caution.

"Surprise" goes hand and hand with caution. The hunter who puts up a deer in the woods must surprise it, either in its bedding ground or while it is moving about feeding. When the cover explodes forty or fifty yards ahead of the rifleman and a deer leaves its concealment, the game is surprised into showing itself. If it hadn't been it would have moved out before the hunter got close enough to give it any great deal of concern. The experienced hunter knows that much depends on the element of surprise in obtaining a shot, and he knows that to surprise a deer he must outwit the three keen senses of its eyes, ears and nose. Caution is one element of surprise. The other is "invisibility."

A hunter has a slightly different definition for the word invisibility than that which will be found in the dictionary. His definition is not quite so all-inclusive. "That," he will say, "is just common horse sense. You hunt without exposing yourself any more than you have to."

The wood-wise rifleman will hunt from the top of a ridge at times, but he is extremely careful not to skyline himself. All his movements will be made with due regard to concealment. Picking his way along the side of the ridge for fifty yards or so, he will cross the rise behind whatever cover will afford concealment. Gaining a vantage point, he examines the slope in detail before exposing himself. Always, if the ridge is at all open, he goes just below the skyline, moving up cautiously to examine the top of the flat for game before he crosses.

Invisibility is always kept in mind, though the hunter may be following a set of tracks which may lead anywhere in the forest. A windfall to be crossed is not something for the experienced hunter to stand on, thus exposing himself to any game which may be in the surrounding brush. He will keep as low as possible in getting over, or if it is off the ground he will cautiously slide under.

The lone scout, standing dramatically on the top of a hill, shading his eyes with his hand as he intently gazes into the blue distance, makes a beautiful picture. But it is a beautiful picture and nothing more. It doesn't come under the head of good tactics whether the game is Japs or deer.

Levy lays considerable emphasis on the movements of the trained guerrilla fighter. "These," he says, "should be slow and deliberate . . . slow-flowing movements to harmonize with nature." Here again the still hunter has found through trial and error that it pays to hunt slowly. Moving through the woods with a keen deliberation is almost instinctive with him. He knows that it is the unusual sound, movement, or sight which frightens game.

Probably nothing is given greater consideration than the wind by the woods rifleman. Often the success or failure of a stalk will depend on his ability to take advantage of the wind. When it is possible, he hunts into it. Sometimes he will give a covert his scent by working downwind in order to put a deer out. But regardless of how he hunts, he must always consider the wind if he is to be successful. What possible advantage could this be to the guerrilla? "When possible, have the wind blowing from the enemy towards you for the wind carries sound." Yank Levy again.

Observation in detail, a fundamental of good deer hunting, has its counterpart in guerrilla fighting. It is not by accident the experienced hunter sees game before the tyro. That is a matter of training; long days spent on the autumn game trails. Where the average person will see the landscape as a general impression, the woodsman will see it in outstanding detail.

Perhaps the tyro and the experienced hunter are watching a burn for deer in the evening. The tyro will get the general impression of a wilderness of down timber, standing snags, brush and fireweed. Colors will be a blend of autumn browns and scarlets, with a wash of green where the young evergreens are reclaiming the desolate ground. But the trained woodsman is seeing a vastly different picture.

The greens stand out as individual trees. The autumn browns and scarlets assume the peculiar

(Cont. on page 22)

Short-Sighted Policy

GENERAL GEORGE MARSHALL, Chief of Staff of the United States Army, believes firmly in the value of small arms marksmanship as a part of the basic training of every soldier. Training schedules for all branches provide more time for individual marksmanship instruction than in any previous war. Truck drivers, airplane mechanics, cooks—all are being taught to shoot. Every rifle and every round of ammunition that can be spared from combat requirements is being made available for small arms training.

But, in spite of all this, the average soldier and the average officer commissioned from civilian life is not being adequately taught the basic principles of small arms firing. The cause and the cure are both apparent.

The cause is a serious lack of properly trained small arms instructors. There exists the desire to teach, *but* the "know how" is lacking.

The well-trained Regular, National Guard and Reserve Officers are scattered over the world. Many have moved into the echelons of higher command. The company officers and non-coms who are responsible for the training of our new levies are young men who have attempted to cram a maze of military knowledge into their non-military heads in a short space of time.

The training policy of the Army, practical in peacetime, has been that company officers should supervise all the training of the men in their units. The theory is that such a system creates the proper "team spirit" and develops the confidence of the men in their leaders.

But under wartime conditions this theory breaks down.

Men are born with different aptitudes. This is an age of specialized skills.

It is archaic and unrealistic to say that an American company commander will command the greatest respect of his men by being a jack-of-all-trades though he be master of none.

The officer's weapon is *command*. He must know the capabilities and the limitations of the men, machines and guns which he commands. He must have the imagination, the initiative, the intelligence and the courage to use these tools to destroy the enemy. He must see that his men are fed but he does not need to know how to cook. His men will respect him because he proves himself as a commander, not because he performs some mechanical detail that should be done by a soldier.

The cure for our declining standards of small arms instruction is the establishment of permanent instruction cadres on every small arms range at officer and enlisted training centers. These cadres should be composed of officers and men who by reason of age or mild physical infirmities are not suited to combat missions. A small arms firing school should be established in each Service Command to give refresher courses to this small arms instruction personnel so as to insure uniform, efficient instruction throughout the Army.

Will the prestige of company commanders suffer? Will the morale of the troops be lower because they have really been taught to shoot by men who know how to teach? Ask the Marines on Guadalcanal. The Marine Corps adopted the "company commanders should instruct their men" theory during the piping times of peace. Came the war, new officers by the hundred, new recruits by the thousand. Small Arms qualifications declined seriously. The Marines reverted to their former system, using over-age men as permanent range instruction cadres. Qualifications immediately climbed to an amazingly high figure. In the Army both the Ordnance Department and the Signal Corps are using the permanent cadre system with excellent results.

If we are to avoid a repetition of the disgraceful spectacle of 1918 when Americans went into battle not knowing how to load their rifles or set their sights, something must be done *now* to establish proper small arms firing schools with permanent training cadres at all Army training centers.—C. B. L.

...and SOME were FREAKS

BY GLENN R. VERNAM

Meet the ancestors of your pet rifle, the "freaks" that finally developed into our modern rifles and pistols.

DID YOU EVER HEAR of a gun that was loaded with the bullet behind the powder? Or a cartridge that tapered toward the base instead of toward the bullet, and was loaded into the front end of the chamber? Or a muzzle-loader with only one barrel, yet good for two shots with a single loading? Breech-loaders of three and four centuries ago? Repeaters almost as old?

Don't start heaving rocks. They weren't my idea. I am just trying to tell about them. Yes, they actually existed. Records and the guns themselves prove it. And a lot of other funny contraptions—brainstorms of gunmakers long since dead. Guns that loaded from the bottom, hammers that worked crosswise, metallic cartridges without primers, cartridges without powder or case, revolvers that turned into knives, daggers or brass knuckles, and probably even threw stones when worst came to worst.

Those were the days! Inventors thrived in the period when firearms were coming of age—almost on a par with the early automobile makers. A chunk of iron and a wild idea were all they needed.

As is ever the case, many a gunmaker of centuries past was far ahead of his time. Like the old boy of Nürnberg who thought up the wheellock, not long after 1500. How his friends must have grinned over their treasured old fusees and matchlocks when they first saw the outlandish contrivance. A toothed wheel, protruding through the bottom of the flash-pan, was fixed to a shaft. This was actuated by a strong spring which was wound up like a clock. By pressing the trigger, the wheel was set in motion, revolving against a piece of flint or iron-pyrites held in the flash pan. Showering sparks ignited the priming powder and the gun fired. "The idea! Any fool could see the uselessness as a practical weapon of such a plaything."

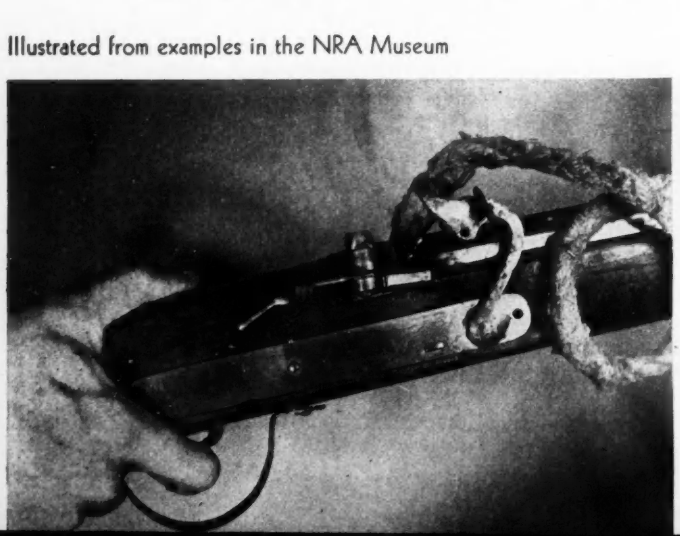
Plaything it was, but for a short while only. The wheellock was made throughout Europe for the next two hundred years, and its use of flint and steel presaged the greatest period of firearms development; a period that was not to end until another equally revolutionary brainstorm, Parson Forsyth's fulminating lock, opened the way to the modern cartridge.

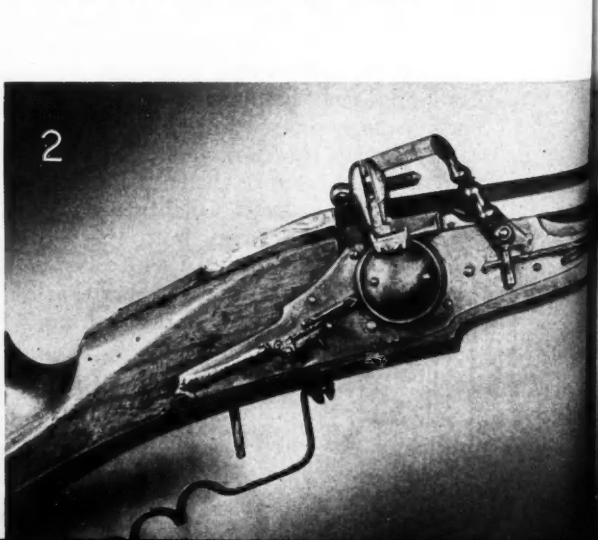
Those first wheellocks started things happening in the gun world. Unlike the matchlock, it was an arm fairly impervious to weather. It made its own spark, and its firing time was but a fraction of that required to dip a lighted cord into the pan of a matchlock. Accuracy began to be thought of, and rifles were not long in appearing. We are prone to think of grooved barrels as something relatively modern. Yet they were present in many a wheellock of the 1500's. Not so modern after all.

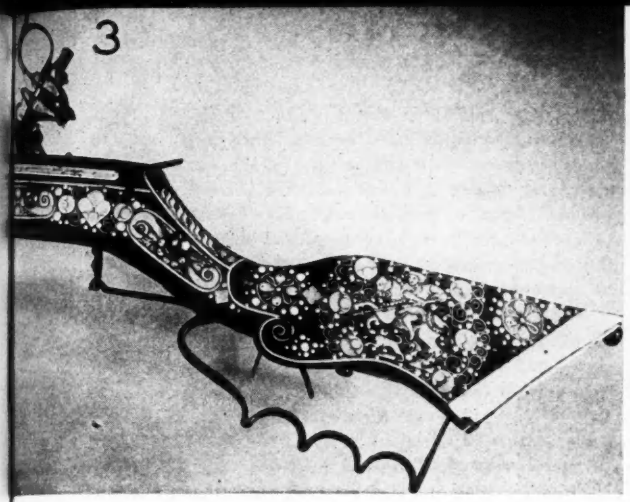
And that new over-and-under gun? They had 'em with wheellocks and flintlocks long before our Revolution. Most were pistols, though there were rifles and shotguns, even rifle-shotgun combinations. Some were fitted with two hammers; another type fired both barrels with a single hammer. Double guns often had the barrels set side by side; others revolved. Nor were they satisfied always with a mere pair of barrels. Somebody was always getting the idea of waging total warfare with one loading.

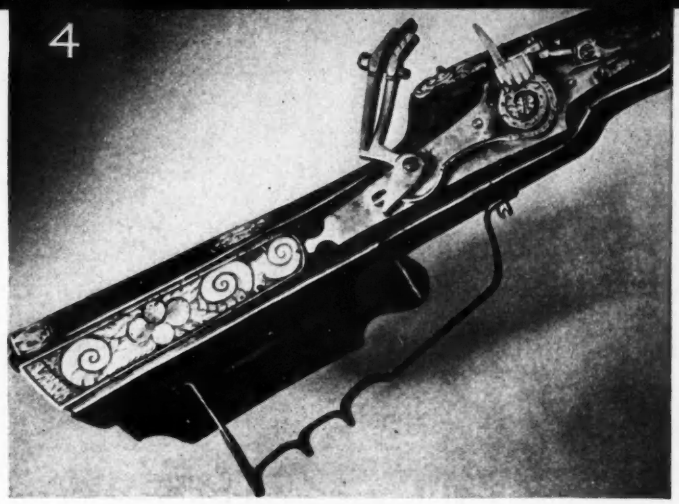
Six- and eight-barreled matchlocks, generally Japanese or Indian, may be seen in many of the larger collections.

Illustrated from examples in the NRA Museum







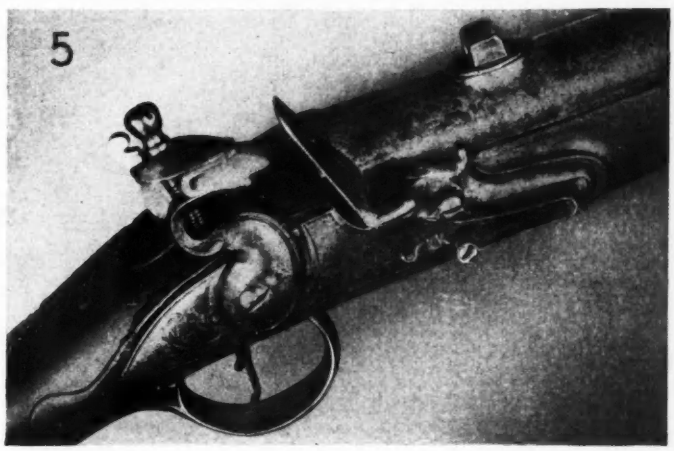


Though seldom as ancient as they appear, they doubtless are the survivors of equally ingenious and far earlier revolvers. Nor was the revolving idea dropped there. There's a wheellock in the Tower of London—a true revolver with cylinder and separate barrel—which was made not much after 1600.

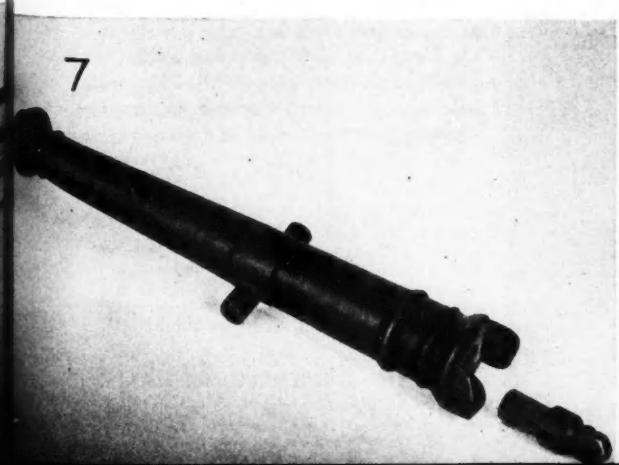
One long-dead Frenchman thought up a flintlock with four parallel barrels. It had two hammers, and the flash pan for each hammer had a hole leading into a channel connected with the vent holes of all four barrels. Something was pretty apt to go somewhere with a rig like that!

There were a number of seven-barreled flintlock carbines used by Lord Nelson's British marines at the Battle of Trafalgar in 1805. The barrels were grouped, one in the center, surrounded by the other six. All fired at once. Of similar arms, gun history records an endless variety of two-, three- or four-barreled flintlocks. Generally the barrels were hand operated to revolve a partial turn for each shot.

Probin, of London, turned out a seven-barreled revolving pistol about 1775. Its barrels revolved by hand, having a stop-catch attached to the movable trigger guard to hold the



THE PICTURES: 1. Primitive and slow to load, inaccurate and subject to wet weather, the matchlock was yet the first practical small arm. 2. The wheellock, first weapon to use flint-and-steel. In this example the toothed wheel is wound by moving the flint holder forward. 3. Strange stocks were the style in the days of the wheellock. This gun was made in Germany about 1600. 4. The "Baltic" lock, a primitive form of the flintlock. 5. Breech loaders are not new! This one is English, of about 1740. The rear sight unscrews to insert powder and ball. 6 and 8. A flintlock repeater! Produced about 1780, this grand-daddy of our tubular-action repeaters carried powder and ball for 21 shots, loaded by a single turn of the barrel and magazine assembly. 7. Breech-loading cannon are no novelty. This one, made during our Revolutionary War, tradition ascribes to Paul Revere



barrels in place for each shot. Other London gunmakers of the same period built four-barreled flintlock pistols with one pair of barrels on top of the other. The two top barrels were fired, then the lower pair turned up for action. A common English and Continental type of flintlock pistol was a double-barreled affair arranged so that it fired by a single hammer. These were fitted with a cut-off device on the side of the frame by which the flash could be diverted to one or the other barrel, or for safety prevented from reaching either. Similar arms had a hammer that could be shifted to fire either barrel.

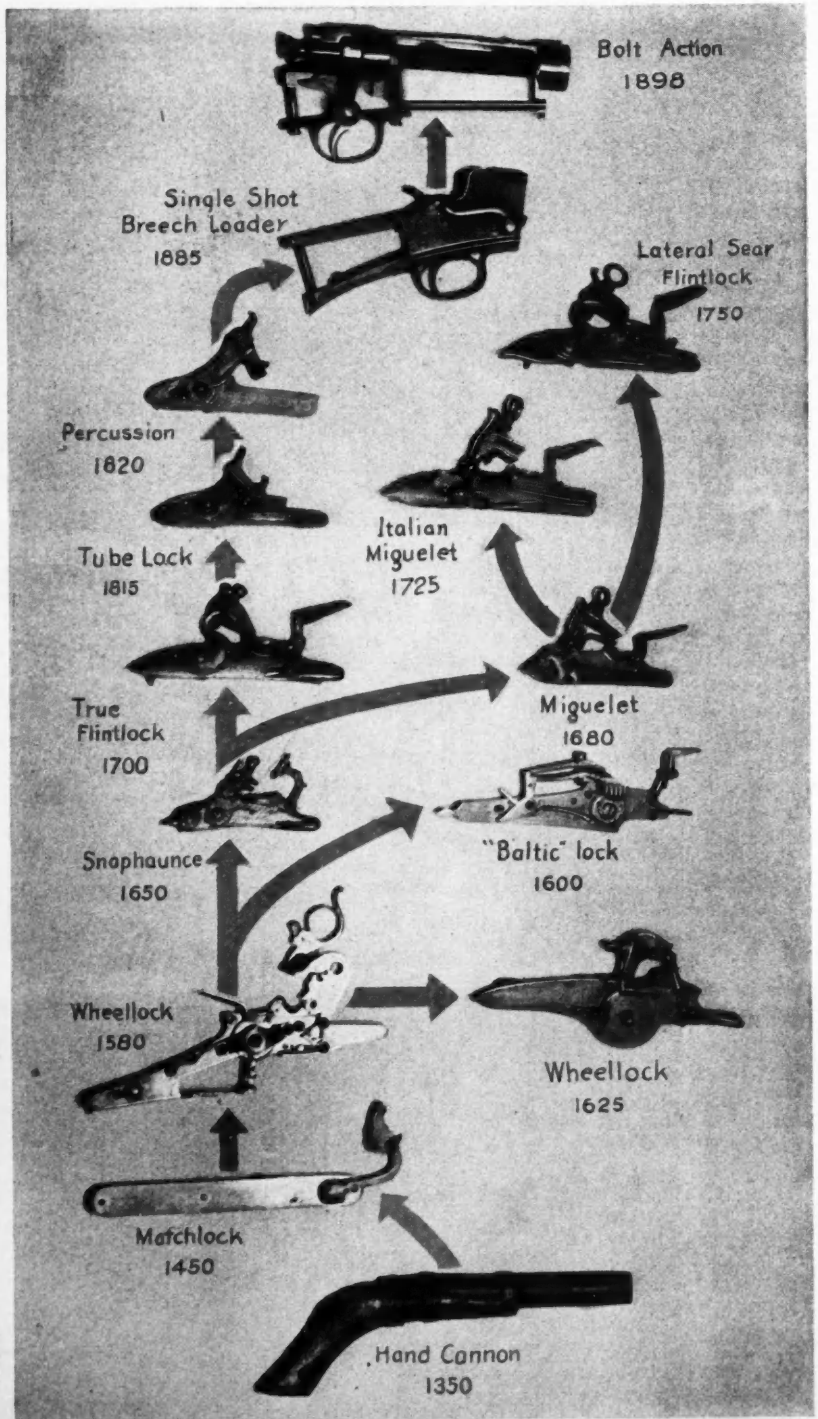
And, too, there was an ancient combination matchlock pistol, dagger and battle-axe, a product of India's inventive genius. It must have been a handy rig. A man could cut down his enemy with the axe, pull out the dagger and collect a scalp, then fire three well-spaced shots as a signal of victory. Any number of variations to the procedure must have suggested themselves to the mind of the ingenious, but alas anonymous, Hindu who first thought of such a combination!

Another freak of about 1700, from France, had a flintlock pistol in the handle of a poignard. Pistol barrels of that era had a way of sprouting daggers, spring bayonets, even whips; while swords, canes and pocket knives were prone to carry pistols in their innards. All of which was befitting the gentleman of that courtly time.

Breechloaders date back almost to the birth of firearms. Cannon of the earliest period were fitted with removable breech blocks to allow of easier charging; it was not, however, until the relatively modern days of the metallic cartridge and, for the big guns, interrupted screw threads, that the breechloader was sufficient proof against escaping gas as to be altogether safe.

A few of the early breechloaders were, however, safe enough against a face full of escaping gas to make their mark in the history of war. Marshal Saxe had his breech-loading "amusettes," playthings, and Major Patrick Ferguson of the British Army "invented" one that bid fair to become a milestone in the development of military arms. Ferguson's English forces used some of them in the Battle of King's Mountain, in the hope of securing equality of fire against that of the Yankee rifleman's muzzle-charged "Kaintucks." Mechanically the rifle was a fair success; in practice, the Redcoats discovered that it required something more than a good gun to beat a natural at his own game.

When "inventing" his rifle, Ferguson, like many an innovator before him, merely adapted to his own needs the ideas of a number of earlier gunmakers. By no means new was the thought of a threaded hole extending through the breech which, when the plug was removed, served as a convenient opening for the insertion of powder and ball. In most rifles of this early form the plug served, when screwed into place, as the back sight. Once the system was evolved in its rudiments, it was a simple matter to bore the hole all the way through the barrel and attach the plug to the forward end of the trigger guard, which then did duty as a handle by which the plug could be unscrewed and the breech opened.



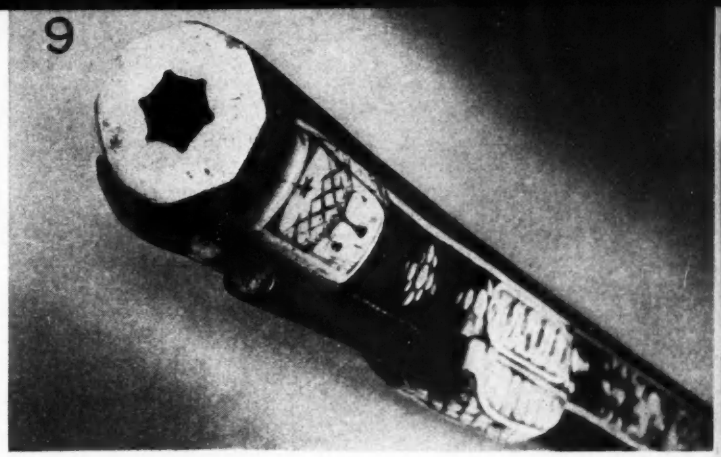
FAMILY TREE of the gunlock. Diagram is simplified for clarity, fails to show complex interrelation between nearly all contemporary forms of ignition systems. Dates may be considered typical of the period each type appeared in perfected form, rather than actual dates of examples illustrated

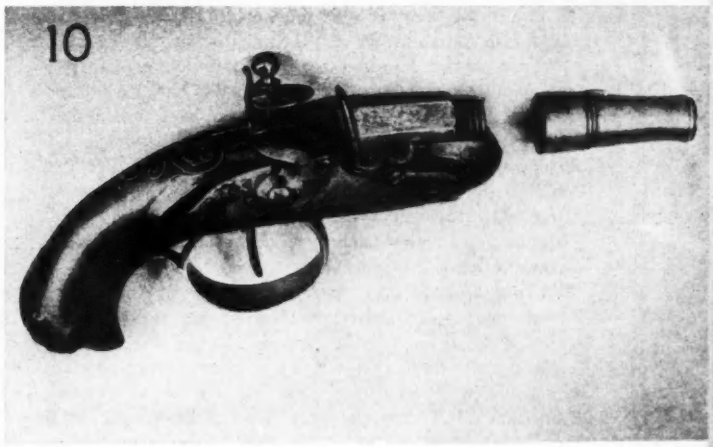
Still somewhat impractical a device, to load these arms one had to revolve the trigger guard eight or ten times before the plug was lowered sufficiently to insert a charge. Speed was the main idea. Ferguson, in common with at least one earlier British gunmaker, a pair of whose pistols are in an American collection, adapted a fast, multiple thread to the breech plug so that by a single turn of the trigger guard the breech could be opened or closed. Loading consisted merely in dropping a ball into the opening, where it was held by a constriction in the bore and by following it with a generous helping of powder. The plug, rising as it closed, measured the charge by scraping ahead of it whatever powder would not flow into the space between bullet and breech plug.

Colonel John H. Hall of North Yarmouth, Massachusetts, developed a breech-loading rifle in 1811, and made a further improvement in percussion rifles some twenty years later. In the breech of these the chamber was hung on a pivot. A small lever beneath or on the side of the frame tilted the chamber block up to admit the paper cartridges used at that time. Hall's rifles had the honor of being the first breech-loaders, as well as the first percussion arms, adopted by the United States Government. An anachronism to these priorities came about during the Civil War, when the same Colonel Hall's rifles became the first ever, in quantity at least, to be altered from breech-loader to muzzle-loader. When the Confederates captured Harper's Ferry, they removed to the South all of the gunmaking machinery they found, together with quantities of unfinished Hall rifles. Lacking parts or material to complete their prizes, these were issued after a simple conversion operation had changed them from breech-loaders to the simplest of singleshot muzzle-loaders.

There were repeating wheellocks in the dear, dead days—guns that actually loaded loose powder and ball, primed and cocked the lock with a single movement of a lever or twist of the barrel! A tubular magazine wheellock gun is preserved in a Danish museum (if the Germans haven't carted it off to Berlin by now) and repeating flintlocks of various patterns are relatively well known. Some, like the famous Cookson guns, of which there are three in collections, plus a good many others of similar mechanical makeup, were loaded by turning a lever on the left side of the frame. A drum, rotating within the frame, carried powder and ball to the chamber from reservoirs in the butt, and in the same motion primed and cocked the lock. Others of these hoary, multi-firing arms, like the one illustrated, made use of tubular magazines beneath the barrel for their supply of ammunition components. And there was even an automatic gun, proposed at least, though perhaps none were ever made. A description of such an arm is preserved for us in the records of Britain's Royal Society, during the last quarter of the 17th century!

To Be Concluded.





THE PICTURES: 9. Rifling was used early in the 16th century. This barrel dates from about 1600. 10. A breech-loading pistol. The tiny barrel unscrews for the insertion of the load. 11. Oddities—greatcoat pistols, one original flintlock, the other altered to the "new-fangled" percussion lock. 12. But two of these are known—flintlock American rifles for left-handers

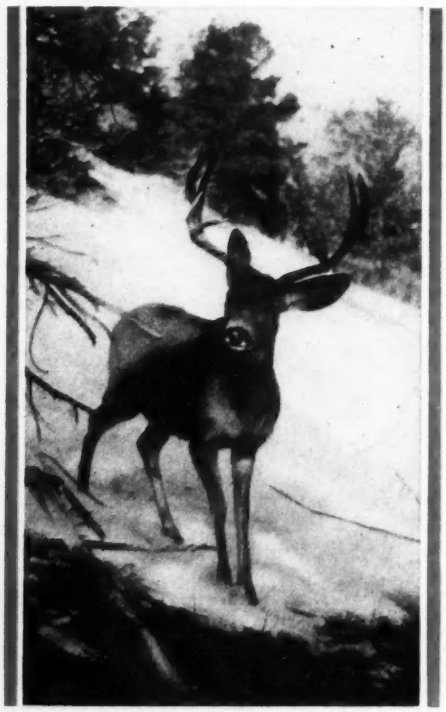
GREY GHOSTS

BY BILL McCANDLASS

YOU MAY TALK to one hunter and he will tell you that the mule deer is the most stupid animal in the world. Talk to another and he'll claim that an old mulie is wise as seven hundred foxes. In which case it is a safe assumption that neither hunter has had a very extensive experience with these grey ghosts of the timber. As is the usual case, the truth lies about halfway between. After a good many years of hunting the mule deer I've come to the conclusion that the big fellow is about on a par with the rest of his four-footed brethren as regards cuteness and wariness. He's not the smartest, but neither is he the dumbest.

In one respect, he is smarter than any of them. He knows how to lay tight, and when I say tight I mean *tight*. I recall an opening morning several seasons back.

My partner and I had arrived in the hunting country at mid-morning of the day before the season opened. By noon we had camp set up. After a bite to eat and a couple of hours of rest we decided to stretch our legs. We left the guns in camp and took out along an open ridge between two deep, wide canyons. We hadn't gone far before we struck some wild plum thickets with a lot of "sign" made by some big old buck that had been feeding there. Past experience told us that the big fellow in all probability was bedded down somewhere not too far from that feeding ground. So we headed back for camp knowing where we would hunt the next morning.



We were out early and back on this same ridge. I had the little jump dog along, a small terrier. Fresh sign showed that the same big buck had been feeding again in the same place, so my partner took a stand and I kept along with the dog as it began slowly working out that new sign.

A little side gulch with steep cliffs ran out of the ridge into the big canyon on the north side. At the head of that gulch was a patch of mahogany and jack pines not over thirty feet across. My partner was up on a spire of rock not a hundred feet above this patch of cover.

As the sign grew warmer the pup speeded up, circled above the side gulch and moved down into the big canyon to the north. I cut down across the head of that gulch, brushing right against that little patch of cover, even heaving half a dozen boulders into it as I went by. And nothing stirred.

I went way down to the mouth of that gulch where I met the pup circling and obviously excited, which meant that the game was close. And now, to my amazement, the pup made a beeline for the head of that side gulch and the little patch of cover. The pup dove into the patch and opened up. There were a couple of wild crashes and out came that big old mulie just a-sizzling. My partner couldn't see the buck because of a fringe of mahogany, but I had a clear, perfect shot and rolled the big fellow over.

Well, there you have it. I had passed within ten or fifteen feet of that buck. I had heaved rocks all around him. I had darn near stepped on him. And he hadn't moved! It was just his hard luck that I happened to have a darn good jump dog along. Otherwise, my partner and I would have moved on, never dreaming that we were within spitting distance of a peach of a buck. Did I say they could lay TIGHT!

Another instance. There were half a dozen of us out together. We were hunting a series of wide draws on the north side of a ridge and in nearly every draw there was an extensive patch of choke cherry brush. We were taking turns working out these brush patches. One of the boys was ploughing up through a patch. It was thick and tough going. Came a wild yell, some crashing, and we could see the brush wave as something cut downhill through it like an express train running away. I got one glimpse of a big old mulie as he cleared the choke cherry thicket in one big bounce, made the most of a fringe of mahogany and hotfooted it to safety in the big timber down below.

OF THE TIMBER

The hunter who had been dogging the brush came out of it spitting deer hair and wiping the dust from his eyes. That buck had actually gotten up so close in front of him it threw dust all over him, besides scaring him out of six months' growth.

Finally, there was the biggest buck I ever killed. It was up close to the Oregon line in the Warner Mountains. We had made an extensive morning hunt without any success. About four in the afternoon my two brothers and I got a little restless and decided to take a leisurely hunt of a big timber ridge above camp. At the lower end of the ridge was an opening with a big rock overlooking it. The plan was for one of us to climb straight up from camp and take a stand on this rock while the other two would go up the canyon for a couple of miles, cut up onto the ridge and drive down it to the point.

Phil went up to the stand. Ralph and I headed up the canyon to make the drive. On the ridge, Ralph dropped just over the crest to the north and I just over it to the south, not over fifty yards apart. Along a ridge like that, smart bucks generally bed close to the crest so that they can, if need be, slip across without much trouble.

We had moved down to within four hundred yards of the clearing. I had had some jack pines to work through and had fallen a little behind. A big old sugar pine loomed just ahead. I started to cut down below it, changed my mind and went around it on the upper side. I stooped low to cut by a couple of jack pines. As I did so I had a clear view up through an aisle in the timber. And there, at the end of that aisle, right on the very crest of the ridge, I saw movement. I froze, took another look and made out that movement to be a huge rack of horns swinging my way. Under those horns were the big ears and grizzled face of a monster mulie.

I dropped on one knee, shoved the rifle ahead. The buck knew I had seen him and he started to pile out. And I killed him as he surged out of his bed.

The point is this. The big fellow had let Ralph pass within twenty yards of him without making a stir, and because he was keeping track of Ralph he hadn't heard nor seen me until too late. Yet, had I turned below that pine tree instead of above it, I would never have seen the buck and he would have stayed right in his bed, letting us go our weary and fruitless way.

Now, if from the above you gather that all mule deer lay this tight, you're wrong. That is where the mulie shows his cuteness. He'll lay close if he figures that is the safest thing to do. On the other hand he may sneak and circle, or just get up and go out a long, long way ahead. So you don't know. You got to give him credit for being a foxy cuss and hunt him accordingly.

Of course, the type of country you are hunting has a lot to do with it. You find mulies in the heavy timber. You find 'em in the high rock rims. You find 'em out among the cedars and junipers and sage brush. You find 'em in the jack pines and in the mahoganies and choke cherry thickets. And in each type of country you have to hunt them differently.

Toward the latter part of the season, when the storms have hit and the snow begins to pile up, they move out, sometimes almost in herds. If you happen along in the right place when such a movement is on, there is nothing to it. But before the storms come along, mulies take as shrewd hunting as any other of the deer family.

In early season, one of my favorite ideas is to hunt for sign rather than deer. Then when I locate a set of good

big tracks, I make a study of the surrounding country and try to figure out where that big fellow can be bedding because, as a rule, a big, fat old mule deer buck is not unlike a big, fat human in some ways. First off, he's lazy. He doesn't like to travel any farther for food and water than he has to, especially food. A mulie seems to be able to get along without too much water if he has to.

If the tracks are real fresh and the country hasn't been hunted too much chances are that buck won't be very far off. Then it is simply up to the hunter to guess where and get him up with a chance for a reasonable shot.

Your mulie can run when he wants to, make no mistake about that. When he really wants to stretch out and go he covers ground like a cyclone.

He is an adaptable cuss. As I said before, you find him in a dozen different kinds of country. For this reason, the mule deer probably offers the hunter more long range shots than does any other of the mowitch family. Go after him in the sage and juniper country, or up among the peaks at the edge of timberline and most of your shooting will be on the long side. For that reason, along with the fact that the mulie takes lots of killing, you want a real gun.

I have seen mule deer take an unbelievable amount of punishment. They don't kill easy, these big fellows, unless you hit 'em just right. Just this last season I ran across a chap with a .300 Magnum. He was an old timer at the game. He told me he had hunted mulies for years and had used about everything in the way of guns. And he had been going to more and more powerful cartridges all the time. The year previous he had lost one while using a .30-'06, so he had gone to the .300 Magnum.

He admitted that it was entirely possible to cripple and lose a big buck no matter what gun you used, but he said stoutly that he would rather err on the side of too much killing power than too little. He was absolutely right, of course.

At the risk of having the multitude down around my ears, I state flatly that the .30-30 and like guns are not enough for mule deer, day in and day out. This is especially true when you get out of the relatively close shooting in timber and into the juniper and sage and high peak country where the range begins to stretch out. My own opinion is that any gun of less power than the .300 Savage should be taboo for use on mule deer, for the mulie is too fine and noble a game to be crippled and lost.

I've run across my share of mulies that had been crippled by lesser guns, only to creep off and die in misery and waste. I remember one old chap in particular with a magnificent rack of horns. The luckless buck had been dead several days, but one of the boys hiked several miles to camp and back again for tools to cut out that rack of horns, which he did, despite the smell. They were too good to be left to the elements and the rodents.

I recall another instance of the comparative futility of underpowered cartridges. Three of us went into the Devil's Garden for the last four days of the season. It was a late fall, the weather clear, crisp and fine. On leaving, I wanted Cedric to take along my spare .270 Winchester, but he wouldn't. He had a .30-30 carbine which he swore by.

Well, we had good luck. Tom and I filled our licenses the first two days, both with exceptional bucks. Then we set out to drive something to Cedric. The last day of the season we drew an empty morning, had a bite of lunch and a rest and set out on one more try.

There was a big dry lake with a pit of timber running out from either side. We told Cedric to go out to the point of one of those timber spits, while we would circle the lake, drive a stretch of mahogany and juniper country down to and through the opposite timber spit in the hope that a good buck might cross from one chunk of timber to the other, thus giving Cedric a good chance. Cedric headed for his stand while Tom and I set out to circle the dry lake. We were nearly to the upper end when we heard Cedric open up with three shots. The last one was echoed by that telltale 'plunk' which told of a hit.

Right after that a beautiful four pointer (western count) came out of that timber spit and headed almost straight for us across the open lake. He was running full out, strong and easily, making a beautiful sight as he came driving along, head out and horns laid back across his driving shoulders.

Then we saw something else. We saw Cedric come right out on a run after that buck. And Tom said. "That's the buck Cedric hit, sure as you're a foot high!"

It was hard to believe that buck was packing a .30-30 slug anywhere. There was not the slightest break in the animal's stride, not the least sign of faltering or weakness. Yet Cedric would not have been taking up the chase unless Tom was right. We did the only thing we could do. We rolled that buck over.

Sure enough, Cedric had hit him. The .30-30 slug had hit just ahead of the right hip, had ranged in and down and chopped the liver all up. But if Tom and I had not happened to be just in the place we were, to stop the animal, that buck would never have had a tag placed on his fine horns. Cedric told us the shot had been made at about sixty yards.

Ced didn't say much while we dressed the buck out and traced the course of the .30-30 slug. But when we had everything ready for the pack out to the car, Ced looked at his gun and said, "For two cents I'd throw this damned thing away."

We talked him out of that brash purpose, of course, but the following season when Ced went north after mulies, he didn't take the .30-30 along. He had a new one, with a lot more punch. The carbine stayed home to be used on the little local brush blacktail, where it takes a darned good buck to dress a hundred pounds.

That harsh, grinding noise I hear comes from the .30-30 boys sharpening up their broad axes for me. Yeah, I know—I know. You've killed scads and scads of deer with the old .30-30. And the statistics show that probably more deer have been killed with the .30-30 than any other caliber, except perhaps the old .44 Winchester. But what the statistics forgot to include were the figures on how many deer have been crippled and lost with that same .30-30. There have been plenty, believe me, more than with that nasty little crippler, the .25-35.

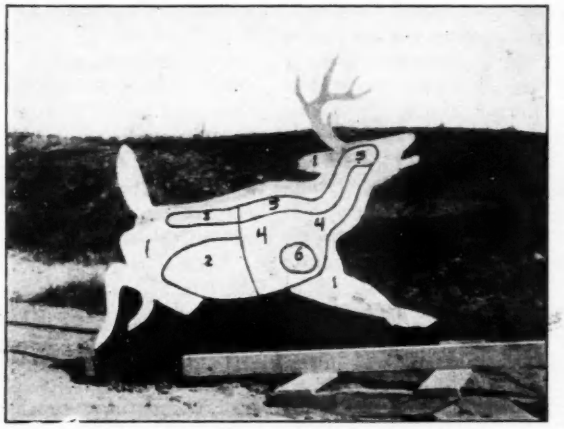
Which makes it about time for the guy from Sawdust Gulch to come up screaming and tell about how he killed a moose with one shot from a .25-35. To which I can only reply that one swallow does not make a summer, or one prune a pie.

Charles Cottar, of African fame, killed elephants with the .250-3000, but he never recommended it as an elephant gun, either for himself or anyone else. He also

(Continued on page 38)

FOR ACTION..*Try Moving Targets*

ONE OF THE CHIEF COMPLAINTS lodged against the target shooting game is its almost complete lack of spectator interest. There is no thrill, say newspaper reporters and onlookers, in watching a long line of small bore shooters sprawled on the ground tediously trying to convert themselves into human machine rests. Exceptions to the rule are the courses designed for the field and big-game shot—*animated targets* that hold, for watcher and shooter alike, the appeal of visible hits on a fast moving object. Here is a pastime that strangely draws the dyed-in-the-wool prone fiend; the tyro hunter attempting to simulate actual conditions afield; the onlooker who perhaps has never before had a chance to see what a creditable game shot can do under hunting conditions.



THE RUNNING DEER RANGE MECHANISM IS THE BASIS FOR MANY SUBSTITUTES OFFERING WARLIKE TARGETS

What makes this subject of more interest right now, is the possibility of substituting targets of war—tank silhouettes, the Nazi counterpart of our Jeeps, or even Hirohito's or Hitler's likeness—for the usual big game outlines. To make the situation more warlike, brush or building outlines may be interspersed over the course, set up just ahead of the target's path. Here a Japanzi can be fired at as he tries to make it from one building or one brush to another. Moving targets such as tanks are popular these days for the shooting brethren. Give them a chance to try blinding a tank by shooting at the slits which can be painted on the silhouette. It has been done in actual warfare. Any number of variations are possible, all based on the running deer range mechanism.

The running deer range as we know it, like so many features of our shooting game, is a British "invention." Sir Edwin Henry Landseer (1802-1873), greatest of English animal artists, designed the stag target first used on the running deer field of the great Wimbledon range. His original drawing of a galloping stag still is a prized possession of the National Rifle Association of Great Britain, in whose offices it hangs. Running on small gauge railways, the Wimbledon and Bisley running deer targets attracted England's finest game shots to ranges otherwise catering solely to the target shot. Here Walter Winans, reputed to have killed more game than any 19th century British gunner, made his record tally of six hits in the heart area fired on a single run at 110 yards.

Camp Perry, mecca of America's shooting clan, for many years included a running deer presided over by the late General Critchfield, godfather of the Perry range. Thought of "Critch" and his "Galloping Goat" recalls the day that a practical joker approached the General and innocently inquired if all shots he was able to place on the target during a single run would be counted in his score, meanwhile casually concealing his rifle behind his back. Critch consenting, the shooter loosed a charge from what proved to be a shotgun, sprinkling the target with a dozen or so buckshot to the chagrin of the amazed Critchfield, who, despite the ruling of a moment before, threw his tormentor off the range.

The modern running deer range, as adapted to club use, can easily be a considerable boost to the club exchequer if promoted in an area where deer hunters flourish. The Flint, Michigan, Rod and Gun Club, as a shining example, has achieved financial independence through their deer target range where on a record day they put as many as 465 shooters over their course. The reason for their success is twofold: Flint is in the center of an area noted for its deer hunting, and secondly, the club personnel has developed a method of running its range which combines extreme speed, a maximum of spectator interest and maximum efficiency for the shooters. How they do it may well serve as a model for any running deer setup.

A standardization of the target used which allows a fair comparison of scores fired on any range is of prime importance. The N. R. A. vital-organ scoring target, similar to that illustrated on page 11 of the December 1936 issue of THE AMERICAN RIFLEMAN, should be used. Available in right or left facing types, they can be obtained through the N. R. A. Though originally designed for use as stationary targets, they will serve equally well for a moving layout for which they simply can be glued on plywood or builder's board cut to shape and mounted on whatever carrying device is used. Scoring lines, though plainly marked, are not visible from the firing line. Based on the anatomy of the white-tailed deer, the high scoring areas are identical with killing shots on a live target.

Motive power for the moving target assembly can best be furnished by a truck or automobile, as shown in the drawing. With such a setup, starting and stopping can be accomplished in a minimum of space; Flint does it with a truck, their target reaching full speed of about 20 m.p.h. in a distance of six feet. Electric power could probably be used with equally good results, but generally is not available on the average suburban range. The method of running the cable between the dual wheels of the truck is shown in the drawing, with idler wheels attached to the chassis of the truck. These could easily be detachable, or be so placed as not to interfere with the use of the truck when not in operation on the range.

The skid arrangement shown is recommended as being the most practical for a permanent running deer range. The "logging sled" on which the target travels eliminates the nearly always unsatisfactory overhead cable, which

is subject to breakage of its own weight or being constantly shot off. The sled has none of the faults of the wheeled type carriage operating on rails or a track. This latter method presents the problem of keeping the fast moving deer on the rails and as well is apt to prove so expensive an installation as to be impractical for club use. With skid-mounted targets, the runway can simply be a level stretch of dirt over which the assembly slides for its open run of 70 yards each way. The entire run of 140 yards at an average speed of 20 m.p.h. usually allows time for three shots going out and two on the return trip. The method of fastening skid to cable, the turn wheel and the power connection are shown in the drawing.

At this point, the question of giving the target some up-and-down motion more nearly to approximate the pace of a live deer will come to mind. The best advice is to forget it. Unless a complicated and probably expensive mechanism actuating a crank or eccentric from a geared wheel were worked out, the resulting breakdowns and loss of efficiency of the target would in no way justify the slightly more life-like appearance of the "deer."

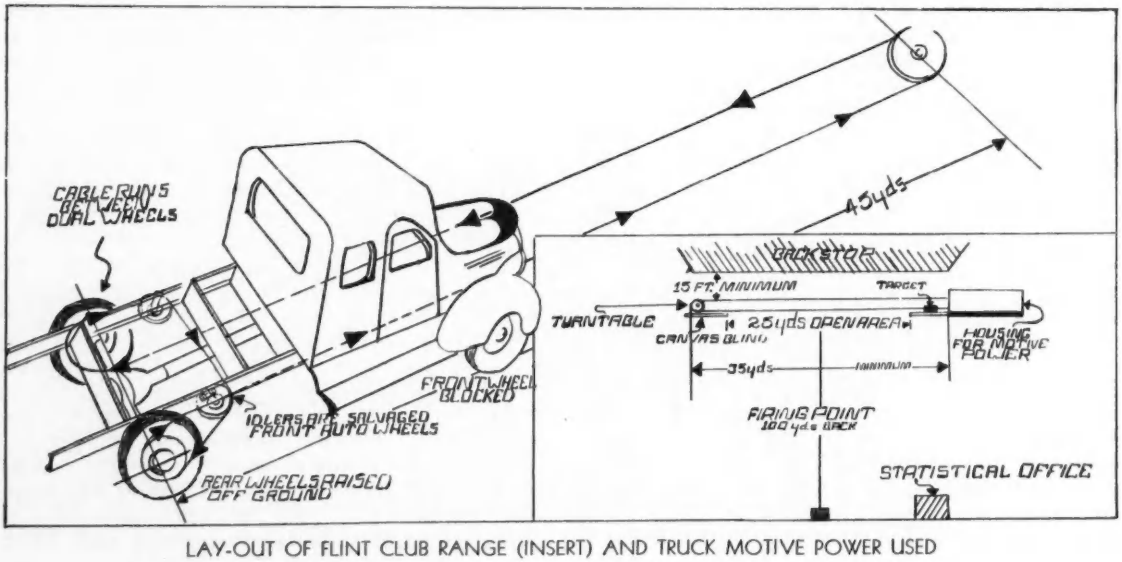
Operation of the range at Flint is somewhat as follows: the range is equipped with four sets of skids on each of which are targets mounted ready for use. Two targets are in operation at one time. While one is on the runway dodging bullets, the second is in the pit being scored. The two others are held in reserve. Scoring is visual as in big-bore shooting, the values being indicated with a disc on another target permanently mounted atop the scoring shed where it is in plain view of the shooter and spectators. At the same time the value and position of the shots (if any) is announced from the firing line by a public address system. The score, shot for shot, is audible to all and sundry. The spectators (there are usually plenty of them) appreciate this and follow the scores closely. Occasionally one of the less fortunate brethren resents this publicizing of his inability to hit a moving target, but he usually will buy another entry just to show the amused gallery that he was only fooling and really can hit the darned thing when he wants. Holes in the targets should be pasted after each run as in rapid-fire practice. Masking tape such as that used in auto paint shops answers the purpose better than any similar material though it is a bit more expensive.

Upon making his entry the competitor is given a blank which has printed on one side, the rules of the game. Upon the other is a place for his name and score, together with a miniature reproduction of the target that he is to fire at with the scoring areas indicated by dotted lines. Competitors are given one run for each entry. The 100-yard points, firing alternately, are used to keep the targets as busy as possible. This can be uncommonly busy when the range is operating under full steam. Changing targets is a matter of but eight seconds, and entries under pressure can be run through at the rate of ninety per hour. While one target-skid assembly is being unhooked, another is secured to the cable.

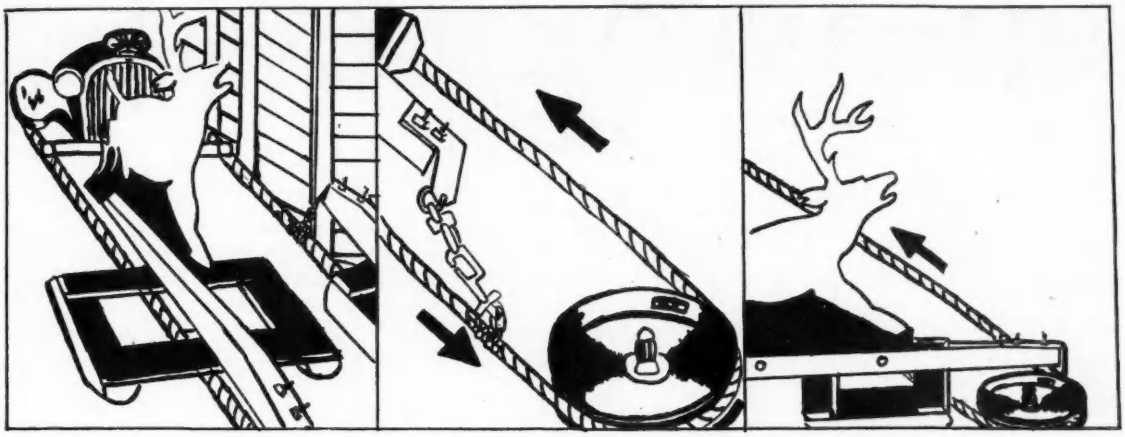
There should be a bank of dirt in front of the path of the deer high enough to protect the skids from rifle fire, and at one end a backstop high enough to protect the power and scoring departments. It is desirable to have a high bank behind the target run to act as a backstop. Not only is this a vital safety factor, but more important from the shooter's viewpoint, the fact that the location of the misses can be spotted by the puff of dust on the bank, and thus giving the shooter some idea of how far off is his lead. It takes a lot of ammunition to teach some of the die-hards how far to lead a buck, but the harder they learn the more entries they buy. To operate the entire setup, three or four boys in the pit handling power, target changing and scoring, will keep things moving, while on the line four or five club members selling entries, scoring, acting as range officers or just supervising will be necessary.

In connection with the running deer range proper, a sighting-in range could well be provided where at no further cost to the shooter he could sight in his rifle before going up on the line. A club member should be stationed on this range to help out if needed.

A comparison of scores fired at Flint, where a target nearly identical with the present N.R.A. deer has been used, tells a dismal story of failure in most cases. Of 894 runs tabulated during part of one season, 144 registered no hits at all, 86 scored but one point and 113 a score of two. The record for the course, fired in 1937, is 26, while



LAY-OUT OF FLINT CLUB RANGE (INSERT) AND TRUCK MOTIVE POWER USED



SKID-MOUNTED TARGETS, ATTACHED TO CABLE WITH POWER HOOK UP

of the 894 runs tabulated the highest was a lone 22. A perfect score of 30, which would be five hits in the heart (6 count) area, has never been approached. Pistol scores range from about 15 down with lots of swabhos. The .22 caliber handguns seem to have the edge in this class.

It is a very common thing for shooters to make four or five entries at a time, and in a locality boasting any considerable number of deer hunters, keeping a running deer layout active should not be difficult. As an aid to conservation, its value as training for inexperienced hunters cannot be underestimated. All too often the would-be deerslayer finds that his lead was too little for a killing shot or that his gun wasn't sighted in properly, or any other of the thousand and one things that make the difference between just hunting and bringing home the venison. A practice round or two at a running deer of the paper variety may prevent another occurrence of missing a barn-door shot at a good head or, infinitely worse, gut-shooting or breaking the leg of a buck and letting it get into the brush to be lost.

A word may be in order about the use of running deer layouts powered by a hand crank (usually a bicycle wheel complete with forks and crank rigged directly on the axle for motive power) and running on an overhead cable. This is the simplest system upon which the fast moving deer or any other desirable target may be operated, but unfortunately it is also the least satisfactory. However, for local club use only, where time can be spared to repair a shot-away cable or wire, there is no reason why such a method should not be practical.

When the moving target runs on an overhead cable, it is suspended by two grooved wheels usually, like an ordinary barn-door carrier. To its lower edge can be attached a cord or light cable passing around two bicycle wheels. The one wheel with operating crank should be far enough to one side of the range, and fully protected from the destructive power of high power bullets for the sake of both operators and equipment. Undoubtedly every club has mechanical-minded members who can gear the wheel up to increase the speed of the cable to compare favorably with a motor-driven target. This should be done only when the club has a sufficient number of willing huskies available to supply the manpower. This type of layout was described in the May, 1934, AMERICAN RIFLEMAN.

Probably the most satisfactory hand-operated system, particularly from the standpoint of equipment maintenance, was described by Capt. E. C. Crossman in the September, 1915, issue of *Field and Stream*. The conventional heavy wire was used to support the target carrier, but protected from the line of fire by being placed in a shallow trench, 18 inches deep by one foot wide, running between two supporting posts set about 25 yards apart.

Thus the target was placed above the operating mechanism, requiring a keel below the carrier to counteract the weight of the "deer" and the tendency to capsize when it is running fast and the air pressure mounts up. A five-pound keel hung by two rods about 8 inches below the carrier usually was satisfactory. One requirement with this type of construction is to keep the target as low down as possible to avoid the danger of capsizing, or to add a heavier keel.

"GERMAN SNIPERS AT DIEPPE"

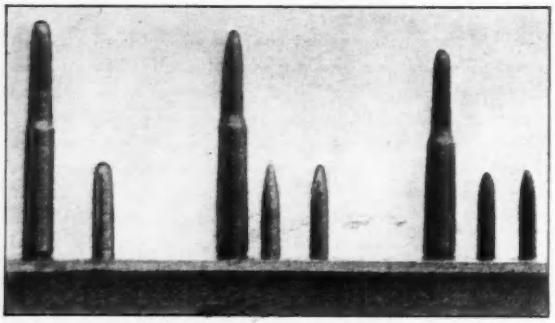
"MUCH HAS BEEN LEARNED by our Commando troops in their splendidly organized raid on Dieppe. A costly lesson in one sector, however, was the fact that the Germans had posted expert snipers with the rifle at certain defensive posts. Whilst it is not disclosed that the rifles were fitted with telescope sights, the fact remains that skilled marksmen with the rifle were the chosen defenders. Thus the lesson taught the Germans by the Australians in Libya has not been neglected by the enemy. It proves again that a skilled marksman, despite the comparative lack of volume of fire, can do most disastrous damage by making every bullet reach its billet. The point we would like to make is that our Home Guard defenders should provide the best marksmen in the coast-wise units with the necessary equipment for sniping the enemy from previously selected positions in the event of invasion."—from *The British Rifleman*.

The .333 O.K.H. Cartridge

By Elmer Keith

Years ago, I came to the conclusion that an all-around rifle cartridge suitable for all species of American game from deer to elk and the big Brown and Grizzly bear, should throw at least 250 grains of bullet metal at a velocity of not less than 2200 feet. The caliber should not be less than .35.

Since then I have changed my mind on only one point and that is the caliber. I have seen a lot of our heavier game killed and killed some of it myself, and have seen no



COMPARISON OF O.K.H. CARTRIDGES. L. TO R.: 333 FROM '06 CASE WITH 300-GR. S.P. BULLET. .285 WITH 180 AND 195-GR. BULLETS. .265 WITH 160-GR. BULLETS

reason to change my opinion. Guns and loads that are ideal for our smaller big game usually require from two to five shots from the average hunter's hands to produce kills on the larger species. One-shot kills on heavy game with light small caliber cartridges have been the exception rather than the rule under my own observation. Also a careful perusal of the articles published in the various sporting magazines on hunts for the larger species nearly always show that elk, moose, Alaskan Brown and Grizzly bear, usually required a number of well placed hits to effect a kill from .30 caliber or smaller rifles. There are, of course, exceptions to all rules, but it is the average we must take of the killing of many heads of such game to form an accurate, reliable opinion on what is best for one-shot clean kills.

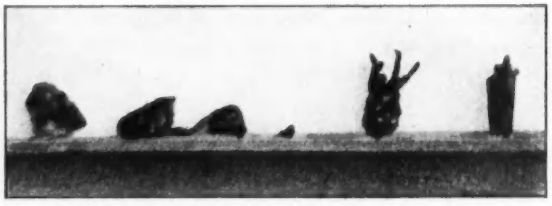
After developing the .285 O.K.H. cartridges, O'Neil, Hopkins and I decided that a larger caliber rifle was needed to take all species of American game under all conditions likely to be encountered in the game fields. We also wanted a cartridge that really could be considered an all-around big game cartridge for this country, suitable for everything from deer and sheep to the largest elk, moose and bear. Something that would not destroy too much of the meat of a small deer, yet would be ample for certain one-shot kills on the heaviest American game. We were unanimously in favor of the .333 caliber, using bullets of both 250 grain spitzer type and 300 grain soft-nose, round-nose type, at the highest velocities possible, these bullets also having the greatest sectional density of any suitable for our larger game. The upshot of it all was the development of two cartridges, the .333 O.K.H. made from an –06 case and the .334 O.K.H. made from a .375 Magnum case. We decided to call the larger cartridge a .334 to distinguish it from its smaller brother.

Both cartridges necessarily are long, and the .333 O.K.H. requires the lengthening of the .30-06 Mauser, Remington and Enfield magazines to handle it. The .334 O.K.H. requires still further lengthening of the Remington and Enfield actions or use of the Magnum Mauser action.

Accuracy was from the first high, and the trajectory curve a very gradual one making holding over the long shots easy. Recoil is not bad to any seasoned shooter used to shotgun shooting. In the .333 O.K.H. Charlie worked up loads with both a 250-grain spitzer bullet and a round nose 300-grain soft point. The cartridge handles 60 grains of powder with the 300-grain slug and 62 grains with the 250-grain slug with moderate pressures and allows easy extraction of fired cases. Velocities are 2635 feet with the 250-grain, and around 2400 feet with the 300-grain slugs. Owing to the great mass, sectional density and small caliber of the .300-grain slug in proportion to its weight, it seemed to shoot flatter over long ranges than any cartridge we ever fired at similar velocity. The long slugs apparently lose velocity at a very slow rate and even when velocity has dropped to 1500 feet, the cartridge still equals the .45-90 at the muzzle but has more penetration.

A careful check on trajectory over a 500 yard range by O'Neil produced a midway trajectory of just 20 inches with standard loads and 300-grain bullet in the .333 O.K.H. Groups often went under the minute of angle per hundred yards of range. While the .35 Newton, .35 Whelen and .375 Magnum can be given very fine muzzle velocity, they one and all shed velocity at a much faster rate owing to their lower sectional density, and one and all have a much faster rate of drop at the longer ranges as well as having less sectional density for certain deep penetration when they do land on stew.

The recoil experienced with standard conventional loads



.333 O.K.H. 300-GR. SLUGS RECOVERED FROM GAME KILLS. 1ST, FATAL SHOT ON ALASKAN BROWNIE. 2ND, FRAGMENTS FROM NECK SHOT. 3RD, FROM BLACK BEAR. 4TH, FROM ELK

was a sharp jerk, which was not bad at all with properly stocked rifles.

I spent some time testing a very light Mauser for the .333 O.K.H. Then O'Neil fitted an Enfield for me with a custom-made barrel much heavier than standard weight. The barrel was more of a straight taper from a point at the first shoulder, and required channeling out the hand-

guards to get them in place. Barrel length was 24 inches and O'Neil fitted an excellent cheekrest, Monte Carlo comb and pistol grip of his own design, which was the best remodeling I have ever seen on a service stock.

I took this .333 O.K.H. rifle with me to Alaska. Sights were as issued but with a screwdriver windage adjustment for zeroing the rifle with the front sight built up. I then carefully shot it in and filed that front sight down until it was exactly right for 300 yards, at an elevation of 4200 feet here at home. I thought that should prove about right for 200 yards along the coast of Alaska in that damp low altitude and for once I guessed correctly as the rifle shot to perfect elevation at 200 yards up there. After killing his first sow Brownie with the .30-06, Mr. H. N. Busick of Baltimore, Maryland, decided to test the .333 O.K.H. on his second Brownie. It proved a large male that squared 9 feet 3 inches laid out on a cannery floor. At a distance of 30 yards, Busick shot from the left side of the animal and planted the long slug in the center of the shoulder. The big fellow dropped on his nose in the river and for several seconds blood pumped out of the entrance hole for a distance of over a foot. The entrance hole was a good inch in diameter. Busick also drove in a second shot to make sure, but it was not needed. The first slug broke the left shoulder and tore a hole the size of a large lemon or small orange through the heavy shoulder bones and muscles, passed between two ribs, took off the aorta and other blood vessels at the top of heart and lodged in the right lung. I found only one large piece of the core and owing to the fact that this bear lay in the middle of the river, it was hard work tracing out fragments of the bullet. The second slug penetrated the heavy shoulder muscles at the front of the shoulder, then went through the big neck and spine and lodged in the meat near the skin on the off side of the neck. We recovered a major portion of this bullet in fragments. The entrance hole and also the wound channel was the same size as the shoulder shot and this through very tough heavy muscles. Penetration was over 20 inches in both cases.

THE LARGE MALE ALASKAN BROWNIE THAT "DROPPED ON HIS NOSE IN THE RIVER" FOLLOWING BUSICK'S THIRTY YARD SHOT WITH THE .333

Later a Black Bear that Busick had shot behind the shoulders with his last Peters belted 225-grain .30-06, jumped out of the river where he was fishing and ran up in the brush and stopped. As Busick was out of ammunition, he used the .333 O.K.H. with 300-grain slug again. This bullet at about 50 to 60 yards entered the bear's right side, a raking entrance, exactly where the Peters slug had come out and torn a long entrance hole two inches wide by seven inches long, shattering most of the ribs on that side, thence absolutely ruining the heart and lungs and penetrating on up in the neck to lodge in the muscles just to the rear of the jaw bones. It was completely expanded and turned wrong side out with probably 100 grains of core left intact and the jacket hanging back in long streamers about an eighth inch wide, which evidently ruptured where the corners of the lands cut into the jacket. This bear also dropped stone dead at the impact. I never saw better execution on bear than these three shots.

Later, here in Idaho, Mrs. Keith, Jason Been of Indiana and I took an elk and deer hunt. Mrs. Keith killed her big mule buck with the .333 O.K.H. and 300-grain loads. Distance 100 yards, bullet entered left ribs, penetrating rear of lungs and liver and out the opposite side, entrance hole was again large, about an inch across or a little over.

The wound channel was about one and a half inches in diameter through the animal. He humped up and made a few short jumps across a small gulch, then stood for a few minutes, dropped and rolled down the mountain. A minimum of meat was damaged, probably less than one pound in this big mule buck. Mr. Been shot his buck across a deep canyon, with the .333 O.K.H. 300-grain load. He guessed the range at 300 yards and held on. The bullet broke the buck's right front leg at the knee, showing plainly the range was much greater than Mr. Been thought, probably being 450 yards. The next two shots missed as the buck ran up the steep mountain at his best gait on three legs, then the fourth shot held up on his head, struck the left shoulder and came out the chest. This was a good 500 yards. The deer dropped and kicked to the bottom of a side canyon. In this case the entrance hole was small but the exit hole was over two inches in diameter, showing conclusively that the 300-grain soft point expands at a full five hundred yards.

I misjudged the distance on my big mule buck also, as the deer was in the sunlight and I in the shade across a deep canyon. I thought he was 300 yards but my first shot held on the lungs dropped low and shattered the right foreleg at the knee. I could plainly hear the slug strike. Then the buck came around the mountain side, climbing higher but getting closer as he was down the canyon from my position on the opposite mountain side. The shot was held at the top of his back over the lungs, and I could hear it strike plainly at 400 yards. The buck made a couple short jumps, stopped, then pitched down the steep mountain and rolled half way to the bottom. That 300-grain slug struck just over the heart and penetrated completely, tearing about a three quarters of an inch exit hole, a large wound channel clear through and a 2 inch hole in the off ribs. A fragment went through the heart.

Mrs. Keith's elk, an old mature cow, was killed by a

lung shot from above at a distance of 60 yards. The shot penetrated the lungs, tearing a large one inch entrance hole and about the same size exit hole, but the inside wound channel again was lemon sized. After a run of fifty yards the cow stopped and rolled down the mountain.

My own elk was a four year old bull, distance a full 300 yards uphill. I heard the slug plunk clearly and the bull humped up and walked a few paces, then broke into a furious run down into heavy timber. We soon heard him crash into a tree and then roll and thrash about as he broke down timber. He went about fifty yards from where the slug struck him in the lungs. The 300-grain soft point tore a very large entrance hole as it broke a rib entering, passed through both lungs, broke two ribs on the off side and lodged under the skin. I found two-thirds of the jacket in one cylindrical section with probably 100 grains of the core remaining, and am sure the other portion of the core lodged some three inches from this in the meat as another rib was cut in two at that place. It is still in the frozen front quarter of meat.

To sum up the effect of these five kills: the smallest deer would weigh around 200 pounds and the largest a good 300 pounds, and on all five animals I doubt if five pounds of meat were damaged. The meat was not bloodshot all around the wound channels as is the case with ultra high velocity loads. In all five cases the animals left excellent blood trails, the blood simply pouring out of them for the short distance each went. Except for rolling, no animal went over 50 yards from where it was struck, on body shots. Neither of the Alaskan bear moved after being hit, but if they had done so they would have left most excellent blood trails.

The cartridge at times tears the largest entrance hole of anything I have ever used, especially when it connects with a rib on entrance. I think due to the amount of soft lead exposed, the round nose, and very good velocity, that this soft point simply explodes on impact at the shorter ranges, yet the great sectional density causes the long slug to drive on deep into the vitals even of heavy animals. I have never seen a big bear die quicker than from its use and very few as quickly. The trajectory curve is so gradual and constant, that it is not hard to hit even a deer vitally at long range if you know your range and rifle. With scope sights it would be much easier to hit, and also to estimate range accurately. Wind drift seems slight.

While the .333 O.K.H. is not as flat or fine a cartridge for sheep and goat shooting alone as the .285 O.K.H., it is by far the best all-around cartridge of the two, as I do not consider the .285 O.K.H. adequate for the heavier game. I do not believe the 300-grain .333 O.K.H. is equal in killing power to the 350-grain .400 Whelen load at less than 100 yards, but it is much superior at all longer ranges. While it is probably not the equal of the 300-grain .375 Magnum load at the shorter ranges, it may well equal or beat the Magnum load at the longer ranges.

The .333 O.K.H. made from the .30-06 case, I honestly believe, will come nearer proving the ideal all-around load for all American game, than anything heretofore produced in this country. Though unnecessarily powerful for all the lighter big game, it is not as destructive either to meat or trophy as are most high velocity smaller-calibered loads. For the man who does not mind recoil and wants the extra range and power the .334 O.K.H. would be a still finer cartridge, but the rifle would necessarily have to be heavier than for the .333 O.K.H. load.

Either cartridge should be very useful in Africa for about all plains shooting and with the 300-grain full patch, round nose loads would be adequate in penetration for brain shots even on elephants. If I had to use one cartridge for the balance of my life for all my big game shooting, I would stick to the .333 O.K.H. or its big brother, the .334 O.K.H.

GUERRILLA SCHOOL

(Continued from page 8)

identity of frost-touched trees and bushes. There is no vague general impression of the landscape. Any unusual shape or color brings his eyes to it instantly. A movement, other than that caused by the wind, is detected at once. And his is a photographic memory for detail, an invaluable asset of the guerrilla fighter.

At times the resemblance between the two activities is startling. Consider this quotation from Yank Levy, "You can't be too careful; you certainly can be too careless." How aptly that is put! How well it applies to still hunting. It is surprising the amount of game which is lost because a hunter becomes careless for a few moments during the stalk. The hunter soon learns to be careful in this school. One careless moment and a nice deer catches him off guard. If he doesn't learn, the lesson is repeated until he is thoroughly grounded in this essential. It would come in handy if he were called upon to play for keeps.

The good still hunter outsmarts, out-thinks a deer. His is an art which is not learned in a day or a week but by endless application. And he is the world's most practical rifleman.

"The good guerrilla fighter must outsmart, out-think the other fellow," and that goes for the jungle warfare of the Solomons, or the sunbaked spaces of the desert, the steppes of Russia or the ice-cakes of the Aleutians.

NEW LIFE *for* OLD BARRELS

The Home Workshop

By Clyde Baker

THERE ARE STILL quite a lot of good guns to be had—even in hock shops, junk shops, and secondhand stores—provided: that you KNOW what is a good gun or a gun with good possibilities; that you are enough of a mechanic to recognize excessive wear; just enough of a cabinet maker to know when a stock is split, "chewed up", or otherwise ruined; and enough of a shooter to select a *barrel* which is either fairly good, or can be made so with reasonable treatment.

A lot of barrels that come under the notice of the rifle crank resemble something the cat decided wasn't worth dragging in. For the past few months I've been inspecting (before, during and after overhauling) a great many rifles, pistols and machine guns which have come in from training stations, supply depots and off ships—some of which have been submerged. I have handled Springfield rifles, serially numbered from almost today's latest, way back to No. 709—the earliest Springfield I ever saw and dating back to the year 1905—barrel and all! And I'll go on record with a statement that I've learned a few things! To wit: that many a barrel which is mighty hard to look upon or through will do surprisingly good shooting if given a chance.

I have seen barrels with the rifling almost worn entirely away at the breech but fairly good the rest of the way, lay 10 straight shots into a 5-inch circle at 100 yards. I've seen barrels which were not badly breech worn, but which showed pronounced rust pitting in the grooves all the way from breech to muzzle, lay them all into a 4-inch circle at the same distance. (I'm speaking now of rifles in the big-game class—.30 caliber or larger.) I've seen such barrels so filled with soft red rust that the first stroke of a cleaning rod brought out a veritable cloud of it, only to learn that most of the rust was on the surface with very little actual pitting of the bore, and the barrels often shooting better than I could hold.

When you consider that 2½- to 3-inch 100-yard groups are about the best that can be had in a machine rest with the average NEW big-game rifle of standard quality, and about 2-inch groups the top limit with many match barrels, the 4 or 5 or even 6-inch group from an old, worn or rusted barrel isn't to be despised. It's better than most of us can hold, and most of our game is shot at less than 100 yards.

With the .22's it's a different matter. For match shooting, of course, only the perfect barrel is to be considered. For game shooting—well, those who shoot rabbits, squirrels, etc., with the .22 long rifle know that shots are seldom taken at more than 50 or 60 yards while the average will run in somewhere between 25 and 40 yards. So, a .22 barrel which will lay even five consecutive shots into a 2-inch circle at 50 yards is not to be sneezed at, and I've seen plenty of very sorry looking barrels that would do better than this.

All of which preachment is intended to lead up to the fact that the chap of limited means or with no really GOOD used guns available—if he must have a rifle for hunting use—need not feel handicapped too greatly by the possession of a barrel which shows that "its years have come upon it." If the gun is of a standard, dependable make, if the breech locks up tightly, if extraction and ejection of the fired cartridge case is OK, then if you don't pay too much for the gun the barrel may have amazing possibilities even though it looks pretty bad.

In the case of the .22, the main hazard is a burned or pitted chamber caused by shooting "shorts" or "longs" in a barrel chambered for the "long rifle" cartridge. This will be indicated by difficult extraction of fired cases and perhaps a noticeable swell or roughness on front end of empty case. (See Figure 1.) Bushing and rechambering the breech of a .22 barrel is by no means beyond the skill of any good machinist or even the careful homeshop mechanic. But that is an operation to be explained at some length in a separate article, so let us pass up such barrels for the present.

When starting to check up on a questionable barrel of any caliber, the first step in cleaning is to run a stiff brass wire bristle brush of the right size through it on a suitable cleaning rod. This is the best opening attack for dry red rust. Brush out all you can with the rod, using the rod from the breech if possible. Take the barrel entirely out of the action if convenient. Next step is a thorough scrubbing with the same brush with a small flannel patch over the end, using boiling hot soapsuds. Hold the end of the barrel in water and "pump" the rod back and forth through its entire length. Then rinse by pouring clean boiling hot water through barrel

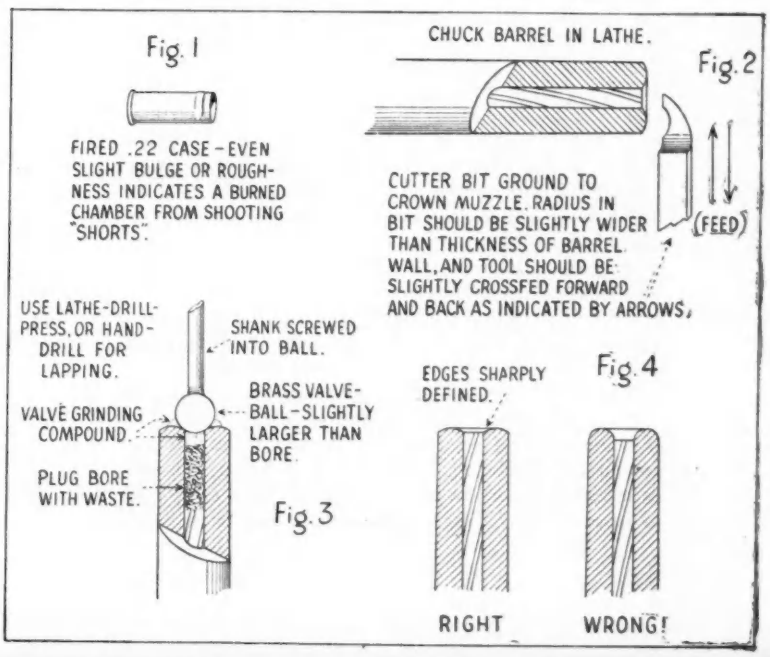


Fig. 1
FIRED .22 CASE – EVEN SLIGHT BULGE OR ROUGHNESS INDICATES A BURNED CHAMBER FROM SHOOTING "SHORTS".
CHUCK BARREL IN LATHE.
Fig. 2
(FEED)
CUTTER BIT GROUND TO CROWN MUZZLE. RADIUS IN BIT SHOULD BE SLIGHTLY WIDER THAN THICKNESS OF BARREL WALL, AND TOOL SHOULD BE SLIGHTLY CROSSFED FORWARD AND BACK AS INDICATED BY ARROWS.
USE LATHE-DRILL-PRESS, OR HAND-DRILL FOR LAPPING.
SHANK SCREWED INTO BALL.
VALVE GRINDING COMPOUND.
BRASS VALVE-BALL – SLIGHTLY LARGER THAN BORE.
PLUG BORE WITH WASTE.
Fig. 3
EDGES SHARPLY DEFINED.
Fig. 4
RIGHT
WRONG!

until hot enough to dry of its own heat. Avoid the use of all oils and commercial cleaners in this first stage for boiling water not only stops further rust action, but also tells you the facts. Next, twist a wisp of very finest steel wool about the brass brush and scour the barrel thoroughly—this treatment won't hurt it a bit.

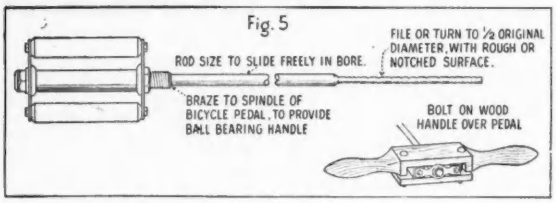


Fig. 5
ROD SIZE TO SLIDE FREELY IN BORE.
FILE OR TURN TO ½ ORIGINAL DIAMETER, WITH ROUGH OR NOTCHED SURFACE.
BRAZE TO SPINDLE OF BICYCLE PEDAL, TO PROVIDE BALL BEARING HANDLE
BOLT ON WOOD HANDLE OVER PEDAL

Rinse again in clean boiling water and inspect,—you may be very agreeably surprised.

If a .22, or any other caliber using lead (unjacketed) bullets, the next step is to remove any leading which may be present. Cork breech end of barrel, pour in some mercury, hold finger over muzzle and roll and tip barrel for several minutes until the lead has amalgamated with the mercury which is then poured out and saved for future use. If you suspect metal fouling from the use of cupro-nickel or other jacketed bullets, now is the time to dope it out before going further. Moisten a flannel patch with "stronger ammonia" (26-28 per cent gas) and swab bore, using a steel—not a brass—rod. If the patch comes out blue in color, you KNOW you have metal fouling so get a bottle of Winchester Crystal Cleaner or mix up the standard "Ammonia Dope" recommended by the Army Ordnance Department as follows:

Ammonium persulphate	½ oz.
Ammonium carbonate	100 gr.
Stronger Ammonia (26-28% gas)	3 oz.
Distilled water	2 oz.

Powder the first two items together in mortar, then add the ammonia and water till completely dissolved. Keep in a dark glass bottle with rubber cork and in a cool place—this mixture will treat two or three barrels, according to caliber. (Use care, for ammonia solution will damage bluing on outside of barrel.)

To use, place rubber stopper in chamber of barrel, and a 2-inch length of rubber tubing over muzzle so that the solution may be poured into a level slightly above the muzzle. If allowed to evaporate below edge of muzzle, it will instantly rust it. After filling barrel, stand it upright for 30 minutes or more, then pour out solution (which will then have turned to a blue color from the dissolved metal fouling). This treatment may be followed immediately with a second similar treatment if there is still some fouling. Then remove tubing and rinse barrel with plenty of clean, *boiling* water.

Now you can see, for the first time, the exact condition of the barrel. If you are sure it is hopeless, throw it away and charge it all up to experience. But even though the breech is badly worn; remember that *it's the last 6 or 8 inches of the muzzle end which really directs the bullet on its course;* if this part looks pretty fair, give the barrel a tryout on the range before scrapping it.

Fire 3 to 5 shots at what you regard as your average hunting range, and note the size of group. Also note if holes in target are round, or if they are partially or completely "keyholing." Keyholing indicates a burred or otherwise deformed muzzle. File off 1/16 of an inch or so as needed. True it up absolutely square with axis of bore. If possible, chuck barrel in lathe and crown muzzle with tool ground as shown in Figure 2, or file in the crown edge carefully, using a flat file on outer half and a half-round, fine die-sinker's file on inner half. To be sure the inner edge of the muzzle is absolutely at right angles with the axis of bore, finish inner edge as shown in Figure 3, using a small brass valve ball slightly larger than bore with a little valve-grinding compound or emery and oil. Figure 4 shows right and wrong shapes for a muzzle crown. Polish crowned surface with fine abrasive cloth, cupping it in palm of hand for the outer half, and holding it on ball of thumb for the inner half. If preferred, muzzle may be filed flat and square instead of crowning. Outer edge should be slightly chambered, and inner edge lapped true with the brass ball as already described.

When you have a perfect muzzle bullets will not keyhole, and your next range test will show you the amount of accuracy you may expect from the bore itself. But a rough, pitted bore picks up leading or metal fouling pretty badly and is a pain in the neck all the time. It is far less accurate than a smooth, well polished bore and cleaning is always an unpleasant chore. So our next and final step in the regeneration of the old gun is that of LAPPING THE BORE from breech to muzzle. It is interesting, not at all difficult, and the results always justify the effort.

Make a lapping rod with head filed as shown in Figure 5; this should be of steel and as large as will slide easily through the bore. Braze or weld end to the threaded spindle end of a bicycle pedal to provide a smooth working ball bearing. Bolt on a cross-bar of hardwood, as shown, for a handle.

Stand barrel vertically in vise (Figure 6). Wrap a bit of cotton twine about rod just below jag tip and insert

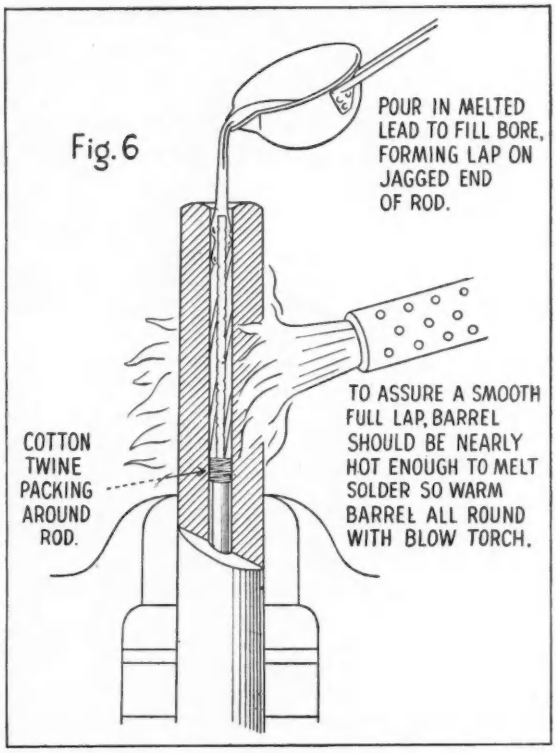
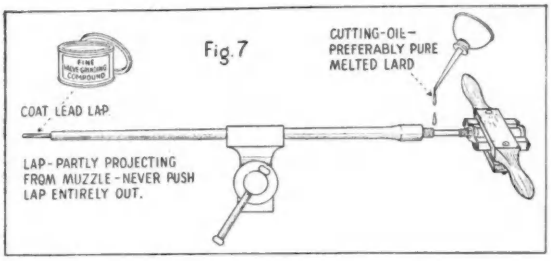


Fig. 6
POUR IN MELTED LEAD TO FILL BORE, FORMING LAP ON JAGGED END OF ROD.
TO ASSURE A SMOOTH FULL LAP, BARREL SHOULD BE NEARLY HOT ENOUGH TO MELT SOLDER SO WARM BARREL ALL ROUND WITH BLOW TORCH.
COTTON TWINE PACKING AROUND ROD.

in barrel, with end of rod about ½ inch below muzzle. Heat barrel until bright muzzle turns blue, then pour in melted lead to form a solid slug around tip. This slug will have the full imprint of the rifling. Push the lap about an inch out of the muzzle and file off any burrs or fins, so that lap may be drawn through barrel. BUT, *never push or pull the lap all the way out at either end.*

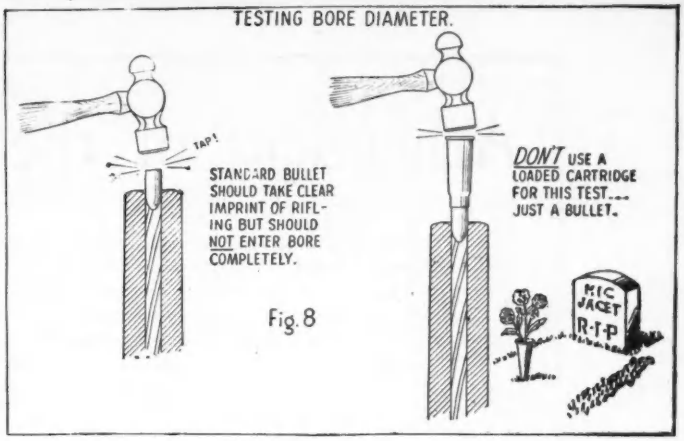
Set barrel horizontally in vise, with handle of lapping rod projecting from breech; push the lap about three fourths its length from muzzle, and coat all over with fine valve-grinding compounds (Figure 7). Squirt oil (melted lard is better) into bore from breech. Grasp rod handle in both hands and draw back and forth the full length of bore, being careful that lap *never* comes out of the bore entirely either at chamber or muzzle. Recoat with the valve-grinding compound as often as necessary to keep the lap taking a good "bite". From fifteen minutes to two or three hours well may be spent in this manner, depending on original condition of bore. If lap becomes too loose for effective use, withdraw, melt it off and cast another as before described.

Note that lap should always be cast near muzzle end of barrel since the greatest wear occurs at the breech. If cast at breech you probably could not push the lap through. Any tight or loose spots will be distinctly felt and the tight ones gradually cut down, as you draw the rod back and forth. This operation does NOT tend to wear out the rifling since its imprint is cast in the lap; hence both lands and grooves are worked down about equally. Test the bore diameter before, during and after lapping with the standard commercial lead alloy or home-cast bullet you intend using. Set bullet on muzzle of barrel, tap lightly with hammer and make sure that it will not enter bore, also, that you get a good imprint of the lands on the bullet (Figure 8). Similarly, try another bullet in breech, pushing it through chamber and tapping it well up into the throat of rifling. Most commercial lead-alloy bullets are several thousandths of an inch larger than even the groove diameter of barrel, hence most barrels will stand considerable lapping without resulting in loose bullet fit. (NOTE: When I say "bullet,"


FINE VALVE GRINDING COMPOUND
COAT LEAD LAP
LAP - PARTLY PROJECTING FROM MUZZLE - NEVER PUSH LAP ENTIRELY OUT.
CUTTING-OIL- PREFERABLY PURE MELTED LARD
Fig. 7

I mean a *bullet*—not a cartridge. Remove a bullet from a cartridge, and don't go tapping on the business end of a loaded cartridge—unless you want your friends walking slowly behind you about day after tomorrow!)

It is amazing the amount of lapping which can be done in this manner without resulting in loose bullet fit, and the extent to which a seemingly ruined barrel may often be improved is truly gratifying. Often, every pit and mark may be completely worked out in a short time, resulting in a fine, smooth, beautifully accurate barrel. But even if only partially worked out, the bore is so smoothed and "evened" for its entire length that accuracy is improved greatly, while metal fouling and/or leading


TESTING BORE DIAMETER.
TAP!
STANDARD BULLET SHOULD TAKE CLEAR IMPRINT OF RIFLING BUT SHOULD NOT ENTER BORE COMPLETELY.
DONT USE A LOADED CARTRIDGE FOR THIS TEST... JUST A BULLET.
MIC JACET R·I·P
Fig. 8

become negligible considerations. And I might remark that most NEW barrels may be greatly improved by a few minutes careful lapping to smooth off the sharpness left by reamers and rifling cutters.

We used to believe in the gun trade that subsequent lapping with finer and still finer abrasives was necessary for finishing off a lapped job. I'll say for the record that I know this to be wholly untrue. Nothing more than commercial automobile valve-grinding compound is needed—the kind which comes with a coarse grit in one end of can and finer stuff in the other. I'll break down and confess that whenever a barrel seems fairly rough, I start the process with the coarser compound and finish off with the finer—but use the coarse for three-fourths of the work. I've found it wholly unnecessary and a useless waste of time and elbow-grease to use pumice, crocus or any abrasive "flour" for finishing a lapping job. Valve-grinding compounds are made invariably of either emery or carborundum, both of which cut fast at first but very quickly crush and "break down" to much finer grade—finishing off as you continue the work with little or no cutting ability, but merely smoothing the surface under treatment. This is exactly what we want.

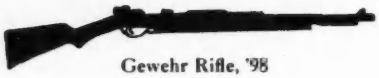
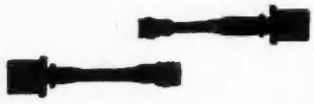
Though I've mentioned only rifles herein, many a good old pistol and revolver with a barrel that looked hopeless has been brought back to very fine accuracy by careful lapping. No swivel handle is necessary for these short barrels; merely allow your hand to turn with the rod as you work it back and forth. And, since, a revolver barrel must be worked from the muzzle end (unless you've equipped to take it out of the frame—as very few are) the danger of "funnelling" the muzzle may be eliminated by using a lapping rod considerably smaller than bore diameter and casting the lap with a long bearing . . . from one-half to one-third the barrel's length.

When satisfied that you've done the best lapping job possible and carried the operation as far as is practicable or beneficial, withdraw the lapping rod completely. Clean the bore with gasoline and an easy-fitting patch on cleaning rod, flush out by pouring more gasoline through it and blow it out with compressed air if available. Then flush and scrub thoroughly with plenty of strong boiling soapsuds, rinse in clean boiling water and finally swab bore lightly with a good thin preservative oil.

Making something good and fine and useful out of nothing—or nearly nothing—is always an inspiration to the conscientious workman. I know of nothing which will result in a more gratifying way than the salvaging of an apparently worthless barrel in this manner.

Armament of the German Platoon

In the German Army the *Gruppe* is the basic infantry unit and corresponds to the U. S. Army squad. It is composed of ten men and is commanded by an *Unterfeldwebel*, a junior noncommissioned officer. The German platoon contains four *Gruppen*, a light-mortar squad of three men, and a platoon headquarters of five men. The platoon is commanded by a *Leutnant* (2nd lieutenant) or an *Oberleutnant* (1st lieutenant). Three platoons and an antitank rifle section of seven men compose the German infantry company commanded by a *Hauptmann* (captain). Weapons of the platoon are shown below and indicate the fire power and mobility of this enemy unit.

Weapon	*No. in Platoon*	*Specifications*
 Gewehr Rifle, '98	28	*Weight:* 9 lbs.; *Length:* 4 ft., 1½ in.; *Caliber:* 7.9-mm. (cal. .31); *Range:* 2,200 yds.; *Bayonet:* 15 in long, 1¼ lbs. *Remarks:* A new rifle is in production, lighter, shorter by 4 inches, with 550 yards more range.
Schmeisser Machine Pistol	5	*Weight:* 9.7 lbs. (11 lbs. with full magazine); *Length:* 31½ in. (without shoulder rest); *Caliber:* 8.9-mm. (cal. .350); *Range:* 1,100 yds.; *Cyclic rate of fire:* 500 r.p.m.; *Effective rate of fire:* 250-320 r.p.m.; *Magazine:* 20, 25, or 50 rounds; *Bayonet:* 15 in. long, 1¼ lbs.
Dual-Purpose Light Machine Gun, MG-34	4	*Weight:* 15½ lbs. (without mount); *Caliber:* 7.9-mm. (cal. .31); *Cyclic rate of fire:* 900 r.p.m.; *Range:* 3,800 yds. (tripod), 2,200 yds. (bipod); *Effective rate of fire:* 110-120 r.p.m. (bipod), 300-350 (tripod); *Magazine:* 25 rounds to strip, 10 strips to belt. *Remarks:* This is a light machine gun with a bipod mount. The same gun, with a tripod mount, is used as a heavy machine gun. Each *Gruppe* carries an antiaircraft tripod mount which makes this an antiaircraft gun also. Air-cooled, the barrel must be changed after 500 continuous rounds.
 Hand Grenades, Model PH 39 and Model 24	56-224	Model PH 39—*Weight:* 1 lb., 5 oz.; *Length:* 16¼ in.; *Time of fuze:* 4½ sec. Model 24—*Weight:* 1 lb., 4 oz.; *Length:* 14 in. *Time of fuze:* 5½ sec. *Remarks:* Fuzes of both are lighted by pulling a cap at the end of the handle. Model PH 39 is said to be 6 to 8 times more effective than Model 24. The heads from Model 24 may be detached and clustered around another grenade, six to a cluster. Each rifleman carries from 2 to 8 grenades.
Luger Pistol, '08	16	*Weight:* 1 lb., 14½ oz.; *Caliber:* 9-mm. (cal. .354); *Magazine:* 8 rounds. *Remarks:* Semiautomatic; short-recoil operation.
50-mm. Light Infantry Mortar	1	*Weight:* 31 lbs.; *Caliber:* 50-mm.; *Range:* 50-500 yds.; *Traverse:* 33 degrees; *Projectile:* HE and smoke, 1¾ lbs.; *Rate of fire:* 6 rounds in 8-9 sec. *Remarks:* Muzzle-loaded and trigger-fired. Elevation and traverse by screw. Range by elevation rather than by altered charge. Detachable sight. Usual burst is 10 rounds.

Courtesy of "ARMY ORDNANCE" *Nov.-Dec. 1942*

COMBAT SHOTGUN TRAINING

THIS IS A CONDENSATION, in two parts, of a new manual, "The ABC of Practical Riot Gun Instruction," compiled by T. Frank Baughman of the Federal Bureau of Investigation, and edited and published by the National Rifle Association. It is the purpose of the manual to outline the basic mechanical features of shotguns suitable for police and military work and to outline a simple training course to prepare men for the use of such guns in combat. This condensation will be concluded next month.

The Manual is divided into four sections—1. **Suitable guns and ammunition**; 2. **Organizing the school**; 3. **Conducting the school**; 4. **Mechanical characteristics of the guns most likely to be in the hands of the students.**

1

SUITABLE GUNS AND AMMUNITION

It is not so much the kind of shotgun that decides its effectiveness for police or military work, but the ability of the man who uses the gun in combat. Certain guns are better for such work than others but every type *can* be used.

Preferred Gauges. Important is the number of pellets fired from each shell. Thus the most suitable shotgun is the 12 gauge; second the 16 gauge and third the 20 gauge. Smaller than 20 gauge can be used for interior short range guard work.

Preferred Types. Best for men not too familiar with firearms is the "pump action" repeater. The autoloading type is second choice because the operator requires added training. Double-barrel or single shot weapons may be used for guard work where a shot at an intruder is likely to result in a precipitate retreat, but are suicide against well-armed raiding parties.

Barrel Length. Long barrels (26″ to 30″) give greater velocity but the easier handling of 20 to 24 inch barrels make them first choice.

Barrel Choke. Cylinder bore guns or modified choke bore are preferable with buckshot or single ball loads as they do not deform buckshot pellets as a full choke does. For this reason a cylinder bore gives a better "pattern" with buckshot than a choke bore. However, full choke guns will shoot both buckshot and single ball loads safely, so do not discard them.

Carrying Slings. Shotguns of foot patrols should be equipped with sling swivels and carrying slings which reduce fatigue and eliminate much shifting from one arm to another which may result in accidental discharge.

Ammunition. One prevalent misconception is that buckshot is ideal for police or military work. Buckshot is the best compromise load but it is poor judgment to issue it as standard ammunition. Remember—First: Police and most guards probably will fire where there is danger of citizens being hit or of damage to important facilities by wide ranging shot. Second: Nothing counts but hits. Pellets that fly all around but past the target without scoring a hit are wasted. Third: There are two kinds of buckshot commonly used in law enforcement work, No. 0 buck about .32 in diameter with 12 balls to the 12 gauge load, and No. 00, .34 with 9 balls.

Buckshot. Although larger "00" will hit harder at longer range than "0," there are only nine pellets to cover the area of the cone throw by the gun. In the same area there will be twelve pellets of "0" so the density is 33⅓% greater, as are also the chances of hitting. Thus the ammunition specified should be No. 0 buckshot.

Solid Shot. Solid shot known as "pumpkin ball" is hard hitting but extremely inaccurate and not recommended. But a new type known as the "rifled slug" gives excellent accuracy up to 75 yards and carries enormous hitting power against cars as well as personnel.

Trap and Hunting Loads. Trap loads carrying as much as 1⅛ oz. of No. 7½ chilled shot or hunting loads carrying 1⅛ to 1¼ of No. 6 or No. 4 shot should be carefully considered for police and plant guard purposes, although not suitable for Minute Man or State Guard use. They carry enormous shocking power at short ranges where they are preferable to buck or ball but soon lose their energy. For night patrolling, 1⅛ to 1¼ oz. of No. 6 or No. 7½ chilled shot gives more shocking power and hit probability than does a revolver.

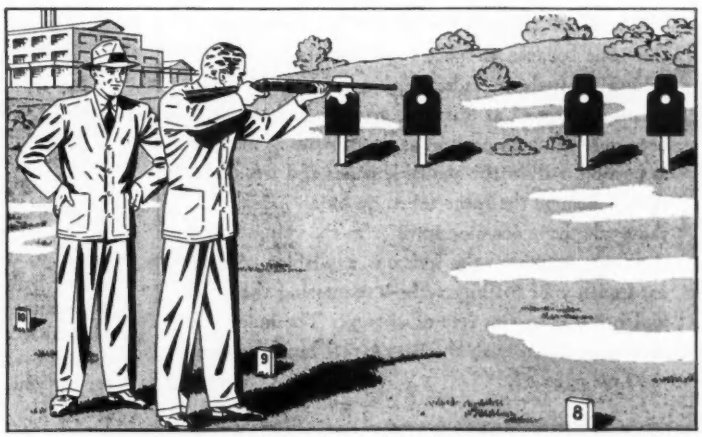
2

ORGANIZING THE SCHOOL

Establishing the Range. The range should be established as close to the operating base of the unit as is feasible. For safety a gentle sloping backstop is desirable even when small sized shot shells are used. For buckshot or solid slug loads an abrupt rise of ground in rear of the targets is necessary.

Range Equipment. Equipment is not expensive and can be built locally. Stationary targets and markers' shelters for the running man and the target carrier system are shown in the manual but must be omitted here. A Chief Instructor's stand gives both him and the students a clear view of demonstrations, and serves as a central gathering point.

Officers' Class. Officers and non-commissioned officers



serve as assistant instructors in training enlisted men. Therefore, the first school will be devoted to training them. As all this instruction must be handled by the Chief Instructor, limit the class to not more than ten students; if more than ten, set up additional classes.

"Coach and Pupil" System. All students are paired into teams of two. One student acts as "coach," observes the way the "pupil" performs the exercise and corrects mistakes. The instructor supervises both the "coach" and the "pupil" and if the "coach" is unable to make the proper correction the instructor does so, explaining the error to both men. Then the pair changes places. This system keeps two students busy on each firing point, develops the teamwork habit.

Performance Records. Men will work harder to win a medal or a place at the top of a score board; so take advantage of this in the school. List every student on a bulletin sheet and grade him for his work. Announce a match at the end, and a prize for the high men.

3

CONDUCTING THE SCHOOL

The school is divided into three phases—(a) Lectures and Demonstrations; (b) Exercises and Practical Work; (c) Examinations and Tests, written and firing. In the class conducted for officers and non-coms the Chief Instructor conducts all lectures, supervises exercises and instruction firing. When the officers and non-coms serve as assistant instructors for enlisted men, the Chief Instructor gives the lectures and demonstrations but the assistant instructors work with students on exercises and instruction firing under supervision of the Chief Instructor.

This Instruction Course is divided into nine lessons designed for one hour each. Two-hour sessions (two lessons) are recommended.

FIRST LESSON

TOPICS:

The Shotgun as a Police and Military Weapon	15 Minutes
Discipline and Personal Safety	10 Minutes
Nomenclature	15 Minutes
Ready Position	20 Minutes

The Shotgun as a Police and Military Weapon. (*Lecture by Chief Instructor*) "Properly trained and equipped shotgun users are frequently more effective than if armed with rifles and certainly than if they had only revolvers. In police or guard work shooting is within shotgun range, in many cases shooting at night. The target is usually moving. Even the experienced rifle or pistol shot is more apt to hit under these circumstances if armed with a shotgun. An additional advantage is elimination of risk from wide ranging bullets in case of a miss. The Minute Man or State Guardsman will find the shotgun effective in situations where shooting will be within the range of buckshot or the rifled slug."

Discipline and Personal Safety. (*Lecture by Chief Instructor*) "Except in actual battle there is no place where discipline is more important than on a shooting range. Because you will see the need you will quickly adapt yourself to this discipline. Until it becomes automatic we will call your attention to your errors to help you and your companions avoid being unnecessarily hurt. Safety in the handling of firearms is a simple matter of common sense plus the development of safe habits which result from proper firing line discipline.

"Here are the common sense safety rules—

1. "Treat every gun as a loaded gun.
2. "Always keep the muzzle pointed in a safe direction.
3. "Personally examine every gun you take hold of to make sure it is not loaded.
4. "Always unload a gun before handing it to another person, before entering a boat or car, climbing or going under a fence or entering a house.
5. "Always inspect the barrel, chamber and action before loading to make sure that there are no obstructions. Never try to shoot an obstruction out of the bore.
6. "Always move the safety latch to the 'SAFE' position as the action is closed. Do this so consistently that putting on the safety becomes one act with closing the action. Then—
7. "Keep your fingers off the trigger and safety latch until ready to fire. Keep your hand around the outside of the trigger guard.
8. "Never carry any ammunition except that for your gun. In the excitement of an expected fight you may load the wrong shell.
9. "Always be sure of your target before you fire.
10. "Never mix gunpowder and alcohol."

Nomenclature. (*Lecture of Chief Instructor*) "It is not our intention to teach you to disassemble and reassemble your guns completely. You must, however, be familiar with the names of the more important parts. (*Instructor holds his gun where students can see each part as it is pointed out, names and explains its function.*

The Ammunition. "The shotgun cartridge is composed—(*Instructor indicates on chart each component as it is mentioned*). (a) The case, (b) The primer, (c) The powder, (d) The wads, (e) The shot charge (*Instructor then explains the function of each component*).

Ready Position. (*Lecture by Chief Instructor*) "In the Ready Position from which you are ready to go into quick action, the gun is held with the small of the stock in your right hand, fore-finger on safety button, left hand on the wooden fore-end. Thus you can bring the weapon to aiming position without changing the grip of either hand. Face approximately one-eighth turn right from your expected target location; feet from 12 to 18 inches apart; left foot ahead of the right; weight distributed evenly but knees not stiff. Keep flexible and alert for you do not know where your target will appear."

(*Lessons 2 to 9 next month*)

1942 RIFLEMAN INDEX

The usual December yearly index is omitted in this issue because of space requirements. The publishing of such an index within the regular pages means the loss of at least one article. It has always been our policy to pack in as much reading material as possible within the available pages and we, therefore, begrudge the space taken up by an index. For those who have occasion to refer to the volumes over the year, however, the index is available. A post card with your mailing address requesting the index will bring it to you free of charge. The index will also be included with the RIFLEMAN binders advertised on page 42.

MAKING THE DRIVE

By Francis E. Sell

DID YOU EVER hunt out a promising piece of territory, put out a buck, and then have something go haywire? It's an all-gone feeling, especially if you planned the strategy in camp the night before, like we did.

Around the campfire the prospects became better the longer we discussed our plan of hunting the cedar swamp. The tracks of a large deer, smoking fresh, led into the swamp. It was late in the day when Bill discovered them and there was every possibility of that deer being in the low ground tomorrow. We had hunted this territory before and knew just about what to expect. So far as we could see, it would only be a matter of one taking the stand while the other drove through the dense brush. There was a well defined runway leading out from the cover. The stand was north of the swamp on higher ground where a ridge ran east and west.

The deer followed the run perfectly until it gained the ridge. Then instead of coming over the rise, where I could have obtained fairly open shooting, for some unaccountable reason it left the runway and swung east. One driver doesn't crowd a deer, and when a deer is merely avoiding a hunter, it usually will use a runway to get out of the neighborhood. But this was an exception.

A week later we had the same experience on this run, except another hunter was on the stand and Bill and I were making the drive. Autumn rolled around again, and we took a deer on this stand under practically the same conditions as the previous unsuccessful drives.

The problem remained unsolved for quite awhile. Bill and I discussed it on several occasions without finding a solution. Then one winter evening, long after the deer season had closed, I was going over some of my hunting notes; remembering, dreaming, as a hunter will when the guns are in the rack, and there in black and white was the answer to our problem.

Among the notes was a sketch of the runway and stand. The stand was just over the ridge from the swamp, selected because it afforded fairly open shooting. Of the deer killed here my notes had this to say in every case, "Cold day, sky overcast, no wind." Of the deer we had jumped which had failed to take the run the notes read, "Warm Indian Summer day, not a trace of wind." When the wind was blowing it rendered this stand ineffectual as the storm winds usually came from the north. We tried driving from the north, but the main runway broke up into a criscross of feeder trails which prevented us taking deer with any certainty when making a stand in the south, not to mention the almost impenetrable mass of brush in the swamp. So we were concerned with finding the reason for our failures on the main runway.

The obvious thing was the fact that somehow the deer was getting the stander's scent. Then I recalled some earlier observations that on a warm day there is always an upward current of wind from the draws and low ground towards the ridges. On still days, this drift is seldom discernible to the hunter, and, if he is moving, in most cases it can be ignored.

But the swamp was a slow country to drive, and in remaining on the stand for an hour or two, there was ample time for the drift to carry its warning to the top of the ridge before the deer exposed itself to the watcher. When the sky was overcast and it was cold, we didn't have this problem.

Taking a stand is often done without considering the conditions under which the shot will have to be made. One should consider all the different angles from which a deer could approach. All game will not come down a well used crossing. Some will follow the game trail only in a general way, especially if they are jumped close to the stand. The fact that most game is put up away from the main runway, on the feeder trails or bedding ground, may cause them to pass to either side of the stander. They will swing eventually into the trail leading away towards the security of the next heavy cover, and if the stand is located some distance from the cover where the deer is jumped, they are more apt to be on the runway when a shot is obtained.

It is well to consider the field of fire when one goes on the stand; how effectively all possibilities can be covered. There is always a best place to be on any stand; the point from which the largest piece of cover is brought under observation, taking the wind into consideration.

Study the ground. You may be intrigued with the nice open shooting to your right, and in your mind's eye can see the game crossing here. But how about the ground to your left? How effectively can you cover it? Perhaps by moving to your

left you can bring this ground into your field of fire, and still cover the shooting to the right.

Naturally, the hunter who moves heavy footed around his stand will obtain little in the way of shooting. Find the vantage point quietly. Move as though you expected to jump a deer directly on the stand. After you have selected a point which best will cover all angles of approach, the less movement the better. Deer are to a great extent dependent on their noses for safety, but they also have eyes. And any object is harder to see when it is at rest than when it is moving. Stomping in the snow to warm cold feet, or vigorously beating one's hands together will produce little venison.

The hunters making the drive have an equal responsibility in putting the game out successfully. They subordinate their hunting to the man on the stand. There is the temptation, ever present on a drive, for a hunter to try to obtain a shot by working slightly ahead of the other drivers. Aside from the ethics of the thing, there is a great possibility of the deer being turned away from the standers. At times, however, shots will be secured by the driver and they should be taken, though the primary object is to put the game out to the standers.

Short drives have less chance of going wrong than longer ones. If the attempt is made to drive a half mile of territory, or more, the game is apt to take refuge in some heavy cover before crossing the stand, allowing the drivers to pass by. When a deer is jumped, there is a limit to how far it will go before finding a hideout.

A little study of the large territory, usually driven, will show that it can be broken up effectively into shorter drives with good results and much less effort for the drivers.

These shorter drives can also be handled with a smaller hunting party, which has much to recommend it. As the numbers of hunters in a party is increased, the chances of any individual hunter getting game is decreased. From two to four hunters is about right. With four hunters two stands can be covered while the other two are driving. And in most cases two stands usually will be sufficient to cover the territory hunted.

Work the territory slowly, downwind if possible. Study the tracks. If they are leading out towards another cover, this information will come in handy on the next drive. There is no occasion to ring cowbells, fire your rifle, or howl at the top of your voice while making a drive. Deer can be moved without this disturbance, and there may be other adjoining territory which you will want to hunt. The quiet drive will not disturb it until you are ready to give it your attention.

When two or more hunters are in the woods, there is always the question of safety. When they are hunting in a party, this consideration is doubly important. Before leaving camp a system of signals should be agreed upon. A hunter approaching a stand should not expose himself until he has made his presence known. I always give a sharp whistle, and if this isn't answered I wait awhile, then try again. Sometimes a deer is near the stand and the stander doesn't care to answer at once. After I receive an answering whistle, I know the stander is expecting me and it's safe to approach. This may seem like a needless precaution among experienced hunters, but it is little trouble and a good safety measure.

"RUSSIA'S FIGHTING FORCES"*

"THE SOVIET GOVERNMENT was not afraid to put arms in the hands of its people. It was not afraid to teach them to use these arms. . . . On a Soviet farm or factory it *is* the business of the whole collective when farmer Ivanov or latheman Petrov does not want to learn to shoot or throw a hand grenade. If he persists, Ivanov or Petrov's life becomes haunted, he is shamed and ostracized. Eventually, he simply *has* to do something for the defense of his country.

"Such was the popularity of this training that eighty per cent of the draftees in Leningrad and Kharkov, for example, appeared for enrollment with badges for marksmanship and other military sports. The Red Army cooperated, placing its shooting ranges at the disposal of Osoaviakhim groups who were also permitted to participate with Red Army units in some of the maneuvers. In 1938, 6,000,000 adults, not to speak of the youth, had won marksmanship badges. The effectiveness of Soviet guerrillas comes in part from the training facilities maintained in all parts of the country . . .

"While it took us, in the old Russian Army, several weeks to teach a country lad to walk correctly and even to distinguish between right and left, the Soviet recruits nowadays are some eighty-five per cent high-school educated. A great number of them are wearers of the Voroshilov sharpshooter badge, the Voroshilov rider badge and similar badges, indicating a considerable amount of valuable training as a start.

"Over sixty per cent of the recruits in the Leningrad military district in 1941 were Voroshilov sharpshooters, that is, had qualified as expert marksmen. From the city itself came 600 snipers, 2,500 machine gunners, and 1000 sharpshooters who had acquired these accomplishments, after work hours, before they joined the army."

Japanese Lieutenant Kofuendo . . . wrote in his notebook (of the Russo-Japanese conflict at Lake Khassan in 1939):

'The Reds made good use of all types of firearms—rifles, light and heavy machine gun. We suffered heavy losses from their accurate fire even when shooting was from a distance of 900 to 1000 meters. The Soviet snipers camouflage themselves well and make skillful use of the terrain. Their soldiers gather in threes and fours, immediately dig in, and fire at our positions with superb marksmanship and inflict heavy losses on us. We had many dead and wounded.'"

* *Quotations from the book by Capt. Sergei N. Kournakoff, published by Duell, Sloan & Pearce, Inc., 270 Madison Ave., N. Y.*

Experiments in BALLISTICS

By F. C. NESS

WHEN YOU SEND your rifle bullets out beyond 200 yards, you begin to expose some of their latent peculiarities. If you are observant or sufficiently interested to seek them, you can discover new properties in your bullets and also get indications of new ballistic phenomena.

At 200 yards we noticed 3½ inches more drop when we fired the same factory load in a 9-inch twist as compared with a 14-inch twist. Apparently some energy was consumed in giving the 100-grain bullet those added revolutions in that 9-inch twist making its net muzzle-velocity lower than the 2900 f.-s. m.v. normal for the 14-inch twist. However, that greater r.p.s. of the bullet might have so affected its flight as to effect greater air resistance and delay. A wind-deflection test could have determined this point, but we believed a longer flight would develop the same fact, should it exist.

Accordingly, we fired the same load in the same two barrels at 600 yards. Here again the same bullet from the 9-inch twist was slower, requiring an average elevation of 23.46 minutes of angle and dropping about 152 inches. From the 14-inch twist this same .25-caliber bullet required an average elevation of 21.35 minutes and dropped about 131 inches over 600 yards. The drop difference was almost in the same ratio at both ranges, or slightly over 1½ minutes at 200 yards and just under 2 minutes at 600 yards. We, therefore, discounted the influence of stability and credited the drop difference to higher muzzle velocity in the slower twist.

Two different handloads, which gave the same drop over 200 yards in the same rifle, showed an appreciable drop difference over 600 yards. In the 9-inch twist we used 34 grains of No. 4064 behind the 117-grain boat-tail and 35.5 grains with the .25-35 100-grain S.P. bullet. The latter required 28.55 minutes of elevation for 600 yards and the heavy boat-tail took 2.3 minutes less elevation. That is, it dropped 14 inches less although its initial velocity was lower. Here was demonstrated the effect of better ballistic efficiency, the "C" value of the 117-grain bullet being .122 higher or 43% better on paper.

In the 14-inch twist this poorer 100-grain load did much better. In fact, it showed the same drop over 600 yards as the 117-grain load in the 9-inch twist, and less drop over 200 yards. Here again a higher muzzle velocity in the 14-inch twist was indicated, giving it a shorter time or 4 inches less drop over 200 yards. But it encountered more air resistance on account of its inferior ballistic coefficient which nullified its advantage in initial velocity and gave it the same net time, the same net drop and the same average velocity over 600 yards. That fact would not have been revealed had we not extended our range beyond 200 yards. At 600 yards we also tried an ordinary load of 31 grains No. 17½ which gave our 100-grain Western O.P. bullet an m.v. of 2500 f.-s. This required an elevation of 29.51 minutes, indicating a drop of 185 inches over 600 yards.

In the 9-inch twist this load had a lower velocity and required a 600-yard elevation of 31.26 minutes which means it dropped 11 inches more than it had from the 14-inch twist barrel. The same powder load behind a 117-grain Remington S.P. bullet required an elevation of 32.40 minutes, and this was also true of 30 grains No. 3031 behind the Remington-Roberts bullet of the same weight. These long 117-grain bullets were not tried in the 14-inch twist, as they could not be given sufficient velocity and spin, when using the .250 Savage case, to adequately stabilize them for any long-range flight from that slow twist.

Now we come to the most interesting part of our experiment. We used as a basic load 36 grains of No. 4064 behind the 87-grain O.P. bullet which probably developed about 2925 f.-s. in the 14-inch twist and 2875 f.-s. or less in the 9-inch twist. The required elevation for the latter rifle over 600 yards was 28 minutes of angle, but only 24.56 minutes elevation was required for the 14-inch twist; a drop difference of about 22 inches in favor of the slow twist and its higher initial velocity. I wanted to know what would happen to the 600-yard drop if we were to improve the shape of the same 87-grain bullet. Friend Gray suggested that I copy the lines of the .280 Ross Match bullet, which I did, on paper.

In my sketch, the blunt-end 5-caliber head became a 10-caliber head, sharply pointed, and the factory flat-base now had a deep hollow base, whose pointed cone-shaped cavity threw the center of mass forward of the old center of form. The periphery form value was improved by as much as .185 and, according to the old du Pont charts, the ballistic coefficient was advanced from .305 to a "C" value of .435 in my new design. I sent this to Lin Jordan and asked for a special bullet-swaging die. He copied my sketch faithfully and added a frill to his heavy die in the form of a lead-excrusion valve at the point of the bullet. Reshaping these jacketed bullets took an amazing amount of power. Rods bent, vises broke and the operator suffered strains and incipient ruptures, all for the sake of a few bullets. Finally we got a 1½ ton Atlas press and our troubles were over until the thrust rod of my bullet swage bent spirally under the terrific pressure, and even the heavy die itself yielded slightly.

As stated above, the new bullets were much improved, at least on paper. We loaded them the same way and, presumably, they had the same muzzle velocity as formerly in both rifles, which was in the neighborhood of 2900 f.-s. There was a very appreciable improvement in flight indicated by our 600-yard shooting of these loads. In the 9-inch twist the 87-grain factory bullet had dropped 176 inches over 600 yards. Now, the same load and bullet in the improved shape dropped four feet less, or only 128 inches. In the 14-inch twist the standard shape had dropped 155 inches while now the reformed bullet dropped a couple feet less, or only 130 inches. It is interesting to note that with the reformed bullet the total drop was practically the same for both twists of rifling, indicating, perhaps, that in its long-headed shape the 87-grain was better stabilized by the quicker twist.

The reformed bullet is .172 inch longer than it was originally. This increased head-length was stolen from

BRIDGEPORT, CONN., DEC. 1942

Rifle Remgto

Possibles and Impossibles

by **FRANK J. KAHRS**

I wish it were possible to use all of the letters I get from readers of the column, but space doesn't permit. However, I try to cover as wide a variety of subjects as possible by using a particularly interesting letter. Here is one I got the other day which I thought a specially good one. Of course, it is a boost for "Kleanbore," but why not? The letter brings out a point that I would like to mention: a disease known among Small Borers as "tinkeritis." I have seen "tinkeritis" in its most virulent form, so here goes:

* * *

"I read with interest your 'Possibles and Impossibles' in the October 1942 Rifleman. I was particularly interested in your Badger State friend's statement of having shot two cartons of 'Kleanbore' without a misfire.

"Who hasn't? Somewhere in 1930 I commenced using 'Kleanbore' in a Model 1891 S & W Single Shot. About 1933 I added a S & W K-22 and have alternated in their use ever since. Of course, I have no record of the number of cartons used, but I would say I have fired 50,000 rounds in each gun and *never* had a misfire. At that time (1930-1937) I had a 50-ft. range in my basement and fired at least 30 shots a day.

"As long as American manufacturers continue to turn out handguns the equal of what they have produced in the past, and the amateur gunsmiths let the trigger pulls alone, they will never have any trouble with ignition on 'Kleanbore' ammunition. Furthermore, there were rifles and pistols in our club that shot 'Kleanbore' exclusively, and the barrels were never cleaned from year to year. If you offered the owners other makes of ammunition to shoot in those guns they would have a fit. 'What the ——, I'll have to clean it,' they would say.

"I am still using the common or garden variety of 'Kleanbore.' It shoots better than I can hold."

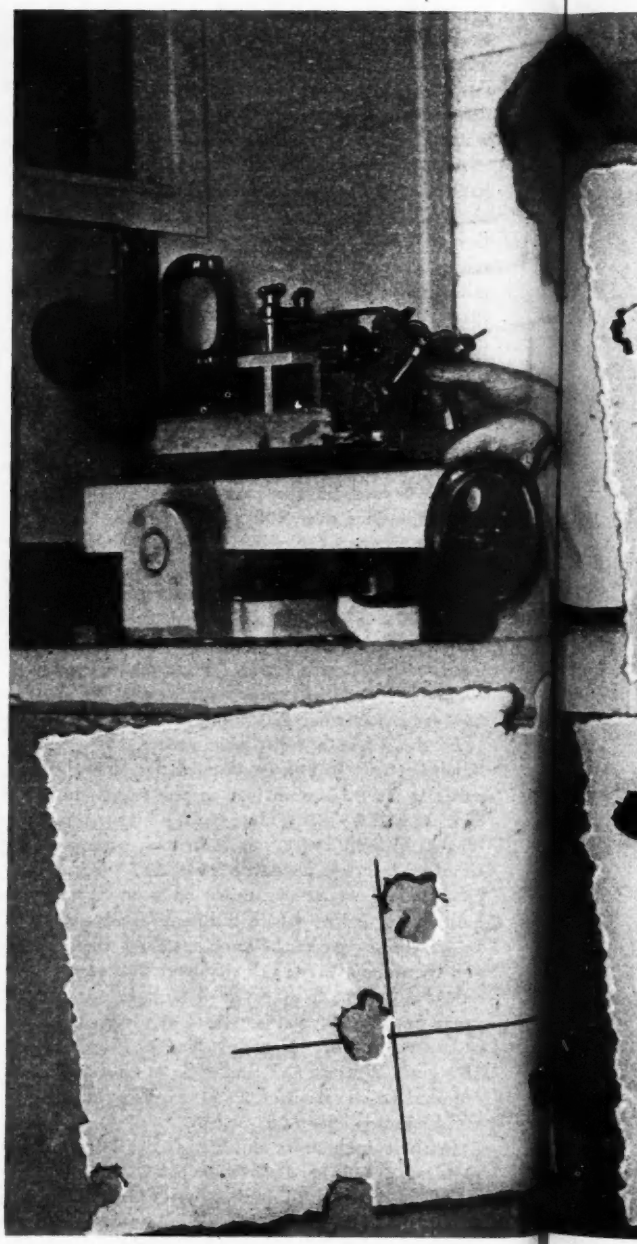
* * *

One of my correspondents has called my attention to a rather interesting occurrence at one of the Class "B" registered tournaments in Kansas recently. It appears that in the very first match, 40 shots at 50 yards, a very charming little Miss of 9 winters and as many summers strolled up to the firing line with a lot of equipment and proceeded to spread it out in the most approved manner of an expert who knew what it was all about. Incidentally, part of the equipment consisted of a Model 513TR Remington which was just about as tall as the little Miss herself. Incidentally, again, she was using "Palma Kleanbore" and "Targetmaster" ammunition, all of which indicates to our somewhat prejudiced viewpoint that she had pretty good equipment. Somebody had shortened the stock for her a bit, which enabled her to hold the gun quite comfortably. It was mounted with a 15-power scope.

I wish I could say that she won the first match with a 400 x 400 and that I sent her a brassard to commemorate her achievement. That would make a swell story and one I'd like to relate. However, to tell the truth, the whole truth and nothing but the truth—she was good, but not quite *that* good.

She scored 388, and won third place in the Marksman Class. Not exactly *bad* for a 9-year-old moppet, is it?

TESTS PROE
AMMUNITO

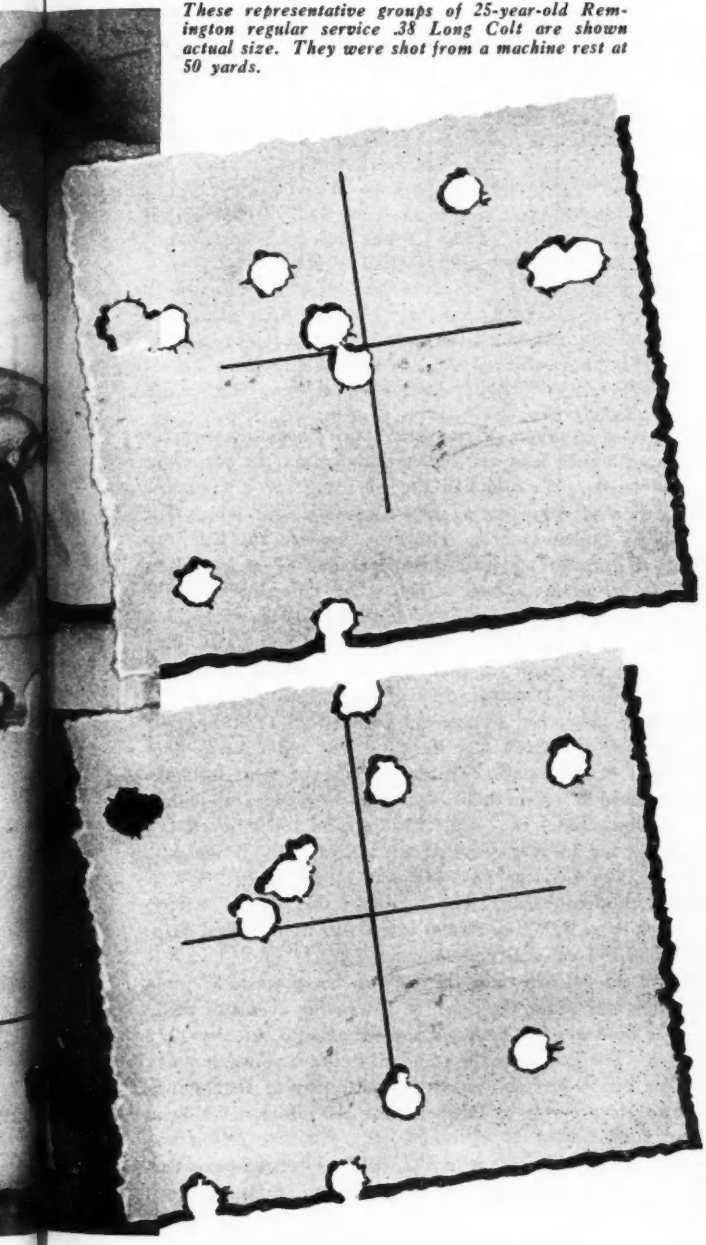


"KLEANBORE", "PALMA" and "TARGETMAST... S. Pat. Off.,

Remington News

A PAPER FOR PEOPLE WHO SHOOT

OE 25-YEAR-OLD SERVICE ION STILL ACCURATE!



These representative groups of 25-year-old Remington regular service .38 Long Colt are shown actual size. They were shot from a machine rest at 50 yards.

During the last war, as in the present one, Remington put all its great manufacturing resources at the disposal of the Army and Navy. And one of the types of ammunition we were asked to supply was regular service .38 Long Colt.

At the close of hostilities, part of the surplus of .38 Long Colt was stored away in a government arsenal and all but forgotten during the years of peace.

Recently, however, the question arose: "Is this 25-year-old Remington ammunition still accurate?" So we were sent a sample batch for testing purposes.

The representative target groups shown at the left . . . shot at 50 yards from a machine rest . . . speak for themselves. And remember that this wasn't custom-tailored match stuff . . . but 25-year-old service ammunition!

Here's how that may affect you:

Since dealers' stocks are no longer being replenished with "factory-fresh" ammunition, many shooters have no alternative to buying ammunition which has spent months or years on the shelves. "Is it still accurate?" they wonder.

The story of the 25-year-old service ammunition is *additional* proof that Remington ammunition, when stored under proper conditions, will retain its original accuracy, uniformity and dependability.

Be sure to take good care of any ammunition you're fortunate enough to have on hand, and it will be good for a long, long time. *Simply store it in a cool, dry place* . . . that's all that's necessary.

If it's Remington, it's right . . . *and it will stay right!*

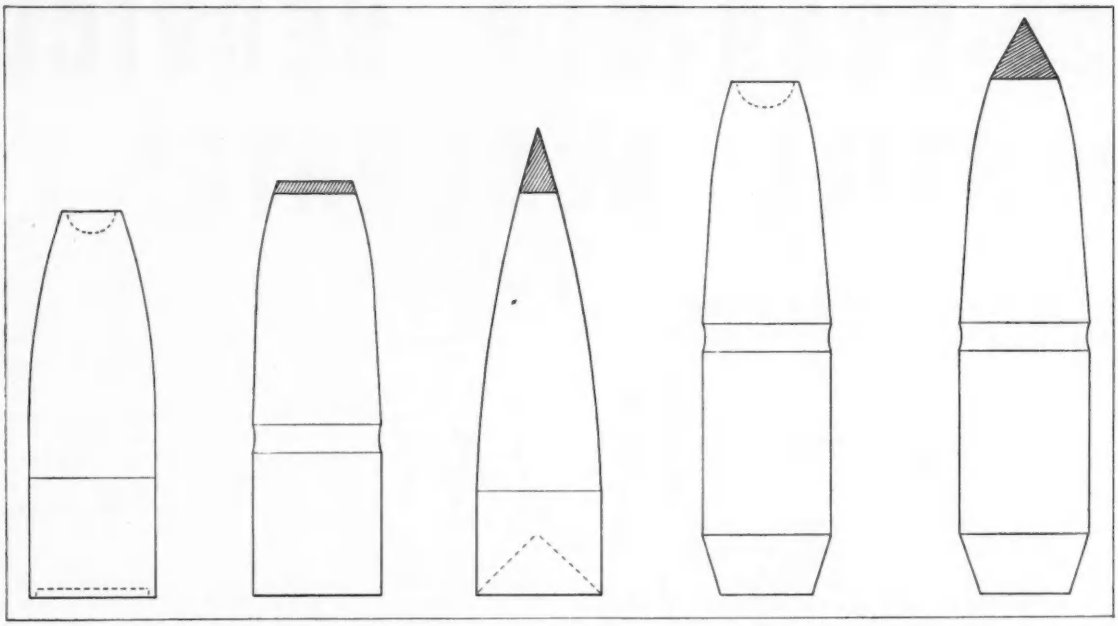
THERE'S ONE IN EVERY CLUB *Ladies' Day*

MASTER. S. Pat. Off., by Remington Arms Co., Bridgeport, Conn.

the original cylinder-length of .248 inch and from the original blunt nose. The ogive radius was improved from 1¼ inches to 2½ inches. These changes did not appreciably improve the accuracy of the bullet, even in the 9-inch twist, but neither did it appreciably spoil the accuracy of the bullet in the 14-inch twist as I had expected.

shift in weight was, unfavorably, to the rear with the center of mass behind its original location.

In our Ross speedboat design of hollow base we had an improvement sufficiently great to become plainly evident in a comparative drop test. The point improvement was there too, but evidently of subordinate importance, judg-



LEFT TO RIGHT: 87-GR. O.P. (5 CAL.) 333 F.S. LOSS (PER 100 YDS.). 100-GR. S.P. (3 CAL.) 286 F.S. LOSS. 87-GR. NRA (10 CAL.) 232 F.S. LOSS. 117-GR. B.T. (4 CAL.) 330 F.S. LOSS. 117-GR. V.A. (4 CAL.) 323 F.S. LOSS.

The accuracy, before and after, with both rifles was very ordinary. Groups ran about 2 inches at 100 yards, 3½ inches at 200 yards and 18 inches at 600 yards.

The deep right-angle base-cavity, with its sides at a 90° angle to opposite sides (45 degrees to the bullet axis passing through the apex of the hollow cone) helped much I believe. More than would a boat-tail, it moved forward the center of mass and also reduced tail drag. At its average velocity of 2200 f.-s. this base cavity was probably more effective than a boat-tail in mitigating vacuum drag at velocities above that of sound.

We tried the point stunt with the boat-tail and had less improvement. This was Van Amburg's bullet sent in by Dr. Kelly. The .25-35 117-grain boat-tail bullet was given a sharply-pointed aluminum tip. The ballistic improvement was too small to be appreciable in a comparative drop test, so I had J. B. Smith try it on his ballistic pendulum at 25 feet and 200 yards. The original bullet, in a 10-inch twist, averaged 2730 f.-s. and 2100 f.-s., a loss of 630 f.-s. over 192 yards. When this boat-tail bullet was reformed the same powder load gave the sharp-point 2754 f.-s. mean and 2134 f.-s. mean, a loss of 620 f.-s. over the same distance. Since that is a loss of about 3 f.-s. per yard, the average would be around 300 f.-s. per hundred, or 1800 f.-s. over 600 yards. Both bullets being boat-tails the sharp point was the principal change, and it gained just enough to compensate for the loss in sectional density, as the reformed bullet weighed 3 grains less on account of its aluminum tip. Also the

ing from its minor effect as per Smith's ballistics with the Van Amburg boat-tail bullet discussed in the preceding paragraph. We also had the advantage of a favorable location of mass-center and of equal weight which Dr. Kelly's bullets lacked. However, we had the handicap of an inferior sectional density as our 87-grain bullets were 20 grains lighter. The other difference was the greater spin of our bullets at 2900 f.-s. m.v. from a 9-inch twist against 2780 f.-s. m.v. from Smith's 10-inch.

Over 600 yards the factory 87-grain bullet apparently required .9574 second time of flight and dropped 176 inches, indicating an average velocity of 1880 f.-s. If the m.v. was 2880 f.-s. the total loss was 2000 f.-s. or 334 f.-s. per hundred yards. With the same load the reformed 87-grain bullet (10-caliber point and hollow speedboat base) took only .8165 second and dropped 128 inches for an average velocity of 2205 f.-s. If the m.v. was 2900 f.-s. the total loss was 1390 f.-s. or 232 f.-s. per hundred yards. The factory bullet had a striking velocity of 880 f.-s. at 600 yards. In its reformed shape it had 1510 f.-s. left at that range.

In the 14-inch twist the drop of the reformed 87-grain bullet was about the same, or 130 inches over 600 yards. The time was .8250 second and the average velocity 2178 f.-s. The gain over the standard bullet was not as great. One reason probably was the inadequacy of the 14-inch twist to properly or fully stabilize the reformed bullet in its long-headed 10-caliber shape. Another reason was the better performance of the standard bullet in this barrel as compared with the 9-inch twist. In the 14-inch

twist it had dropped only 155 inches over 600 yards indicating a time of .8985 second and an average velocity of 2003 f.-s.; 123 f.-s. higher than the 9-inch twist.

Assuming the same m.v. of 2900 f.-s. the loss was 1794 f.-s. or only 299 f.-s per hundred yards. When reformed this bullet was probably given 2920 f.-s. in the 14-inch twist and the loss would be 1464 f.-s. or 244 f.-s. per hundred yards. The striking velocity of the standard bullet was 1106 f.-s. at 600 yards, while in its reformed shape it had 1436 f.-s. remaining at that range.

We tried a standard 117-grain boat-tail bullet in the 9-inch twist over 600 yards at an m.v. of about 2600 f.-s. It dropped 165 inches indicating a time of .9270 second and an average velocity of 1942 f.-s. That is a loss of only 1316 f.-s. or 220 f.-s. per hundred yards. A 100-grain S.P. flat base fired from the 14-inch twist at 2800 f.-s. had the same drop, time and average velocity, which meant a loss of 1716 f.-s. or 286 f.-s. per hundred yards. This one had a striking velocity of 1084 f.-s., whereas the 117-grain boat-tail bullet starting out 200 f.-s. lower had a terminal velocity 200 f.-s. higher, or 1284 f.-s. at 600 yards. A part of that is accounted for by the boat-tail base, but the 17-grain greater weight or greater sectional density of the 117-grain bullet is responsible for the major portion of the gain.

We also tried a 100-grain O.P. bullet at 2500 f.-s. m.v. which dropped 185 inches from the 14-inch twist. The time was .9816 second and the average velocity, 1834 f.-s. The loss was 1332 f.-s. or 222 f.-s. per hundred yards. The striking velocity was 1168 f.-s. In the 9-inch twist we tried a 100-grain S.P. bullet at 2775 f.-s. m.v., estimated, which dropped 180 inches over 600 yards. The time was .9683 f.-s. and the average velocity, 1849 f.-s. The rate of loss was 309 f.-s. per 100 yds. and the total loss 1834 f.-s. The remaining velocity was only 922 f.-s.

We also tried a factory load whose 100-grain bullet was cataloged at 2900 f.-s. m.v. in the 14-inch twist. This dropped 131 inches over 600 yards and had a time of .8260 second with an average velocity of 2180 f.-s. The loss was 1440 f.-s. or 240 f.-s. per hundred yards. The striking velocity was 1460 f.-s. In the 9-inch twist this factory bullet probably had only 2875 f.-s. m.v. From this rifle it dropped 152 inches in the time of .890 second and had an average velocity over 600 yards of 2023 f.-s. The loss was 1705 f.-s. at the rate of 284 f.-s. per hundred yards. The r.v. at 600 yards was 1170 f.-s.

Of all bullets fired the 117-grain boat-tail was most accurate in the 9-inch twist; better than 1½ inches at 100 yards and better than 2½ inches at 200 yards. The Western .25-35 caliber boat-tail bullet was the most accurate 117-grain bullet in several .25-caliber rifles. This bullet reformed with a sharp aluminum tip by Van Amburg was also accurate.

In the ballistic dope my figures are not intended to be arbitrary as muzzle velocities were estimated and my calculated losses and striking velocities were based on those estimates. They are close to the truth, however, and the differences noted are even more accurate as they were obtained by shooting.

Relative to the factory load, our drop and loss figures agreed fairly well with those of the maker. The catalog ballistics gave a greater velocity loss over the first hundred yards, but this is to be expected as the diminishing loss over the remaining 500 yards of our range would modify the average loss per hundred yards to agree closely with my own findings as given. Another maker gives the same bullet 110 f.-s. lower initial velocity and a hundred yard loss of 240 f.-s. which is exactly the rate of loss which I quoted for the 14-inch twist.

I would expect even better results from the speedboat hollow-base when applied to heavier bullets. We did reform the 100-grain weight, but not enough of them for any long-range shooting. After the war we hope to continue our experiments with heavier bullets.

BULLET DROP BELOW LINE OF BORE AT 600 YARDS

87-grain Reshaped about 2900 f.-s.m.v.	(9-inch twist)	128 inches
87-grain Reshaped about 2900 f.-s.m.v.	(14-inch twist)	130.5 inches
100-grain Open Point about 2900 f.-s.m.v.	(14-inch twist)	130.5 inches
100-grain Open Point about 2875 f.-s.m.v.	(9-inch twist)	152 inches
87-grain Open Point about 2900 f.-s.m.v.	(14-inch twist)	155 inches
100-grain Soft Point about 2800 f.-s.m.v.	(14-inch twist)	165 inches
117-grain Boat Tail about 2600 f.-s.m.v.	(9-inch twist)	165 inches
87-grain Open Point about 2880 f.-s.m.v.	(9-inch twist)	176 inches
100-grain Soft Point about 2775 f.-s.m.v.	(9-inch twist)	180 inches
100-grain Open Point about 2500 f.-s.m.v.	(14-inch twist)	185 inches
100-grain Open Point about 2475 f.-s.m.v.	(9-inch twist)	196 inches
117-grain Flat Base about 2500 f.-s.m.v.	(9-inch twist)	204 inches
117-grain Soft Point about 2450 f.-s.m.v.	(9-inch twist)	204 inches

Any Alibis?

HANDLOADING THE .32 S.&W. LONG . . .

TO AN ASPIRING DUB not listed in the Master Class of pistoleers Smitty Brown's article about the .32 caliber as a match cartridge, which appeared in this department some time ago (Jan. 1942) struck a responsive chord with me. In the vernacular of the day I feel impelled to "give out" on my experiences with this interesting cartridge.

The desire to own a .32 caliber target revolver was born during our 1941 state outdoor pistol tournament. During the center fire, timed-fire match I was shooting next to one of the best pistol shots in the state, and while I was scoring a modest 90 with my Smith & Wesson Outdoorsman he shot the prettiest possible anyone could wish with a .32 caliber. Not a shot touched the circle of the ten ring, but all of them were well in the center.

Right then I determined to obtain the smaller caliber and endeavor to raise my center fire scores out of the Marksman Class. Accordingly a new .32 caliber Officer's Model was purchased along with reloading tools, bullet mold, a thousand rounds of factory wadcutter cartridges; and I was ready to conquer new worlds.

My handloading is done on a Pacific tool using the Hensley bullet No. 65 sized to .314 inches and lubricated with a home-prepared lubricant consisting of approximately a third beeswax, a third paraffin, a third hard oil mixed with several tablespoonfuls of graphite to the pound. I have used this lubricant for about ten years in the loading of thousands of cartridges in a number of calibers, both rifle and pistol. It works through my resizing and lubricating press as well as commercial lubricants and bullets lubricated with it have stood by for several years before loading, with no hardening or deterioration of the lubricant. I have never had any leading trouble with this lubricant and as my bullets are prepared from scrap lead, probably no two batches are of quite the same hardness. I harden my bullet metal by the addition of linotype metal until the bullets are tough enough to resist nicking easily with a finger nail.

The first load tried proved so successful that I have retained it for all of my twenty-five yard shooting. Using the Hensley bullet backed by a charge of 1.7 grains No. 6, my scores over the short N. R. A. National Match Course closely approach and sometimes better my scores over the same course with the Match Target Woodsman. Recoil and report are only slightly more than the .22 long rifle. It is noticeably milder than the Remington factory target loads.

A twenty shot target on the official twenty-five yard slow fire target scored 92-89 for 181 x 200. A composite target of the Camp Perry Course scored 97 in slow fire, 95 in timed-fire and 92 in rapid-fire for a total of 284 x 300.

A heavier load being desired for fifty yard shooting, a charge of 2.4 grains No. 6 was tried behind the same bullet giving fine accuracy and resulting in an average score of 85.6 per cent. My best score with this load was a 93. The first four shots were tens centered in the upper half of the ten ring. Unfortunately, watching this pleasing group form through the spotting scope caused my collar to tighten with the result that only one of the remaining six shots found its berth in the ten ring.

In my particular case the two loads described above are advantageous because they require no sight change. The heavier load required a six o'clock hold at fifty yards, and the light load is held center for the timed- and rapid-fire stages at twenty-five yards.

A load of 2.0 grains of Bullseye was also tried behind the Hensley bullet. Recoil was slightly heavier than the factory wadcutter load but was less than the 2.4 grains load of No. 6. Accuracy was good, but as only five scores over the National Match Course were fired with this load its average was not as good as the two loads employing No. 6 as a propellant.

Since I have no machine rest to test the grouping ability of my loads, I gauge their accuracy by comparing the scores with those obtained when using factory ammunition. My average over the course during the firing of five hundred factory loads was 264 x 300. After firing several thousand of my favorite handloads my average rose to 266.8 x 300. My best score over the long National Match Course has been 278 x 300. A number of times I have bettered my .22 caliber score fired on the same day. So I have full confidence in my loads to deliver the bullet to the point where the front sight lined up when the hammer fell.

For ten years of rather casual pistol shooting my favorite center fire gun was a Smith & Wesson Outdoorsman in .38 Special, but my average over the National Match Course was never better than a 247. After six months shooting with the .32 caliber, my average has climbed almost twenty points. So in my case the lighter caliber has resulted in a decided improvement, and I am sure that the average pistol shooter like myself will be better served with a .32 caliber for target shooting.

It is rather odd when you think of it that a shooter, as in my case, will hear and read a lot of favorable comment on something like this .32 caliber but will do nothing about it until his own pet game is specifically involved.

The late Walter Davenport, backwoodsman Ashley Haines, exhibition shooter Gus Peret, ammunition technician Bill Tewes, gun editor Fred Ness, handgun technician Walter Roper and many others closely identified with the shooting game have in the past been boosters of the .32 S. & W. long caliber. Although they gave their reasons,—from light weight for the trail, economy for the pocketbook, light recoil for fancy shooting, to ideal suitability for small-game shooting,—I never fully appreciated why it could be so desirable to its advocates until I finally tried it myself in formal target shooting. It was such a revelation to me I felt it might excite similar favorable reaction and response among other shooters who had remained aloof. They merely will have to try this cartridge to appreciate it, and I suggest they do so.

Edward Price

The Old Coach

THE GARAND RIFLE

As our N. R. A. instructors and coaches work with young men in civil life, teaching them to shoot the rifle well, it is inevitable that sooner or later their pupils will wish to know all about the Garand rifle, or as it is officially called, the "U. S. Rifle, Caliber .30, M1." (The last initials are pronounced "Em-One.") Unfortunately it will be almost impossible for an instructor to obtain one of those rifles to show his pupils. Indeed he may never have seen one himself. So far there has been no surplus of these rifles to issue or even to lend for civilian instruction. Every one that can be turned out by our arsenals has been badly needed by our Army and Marine Corps, where it is the standard and official weapon for all rifle companies and troops—that is, Infantry, Cavalry, Engineers, and Marines. It replaced the Springfield rifle (U. S. Rifle, Caliber .30, M1903) about two years ago, although the latter well known rifle is still used to arm other troops.

We coaches are therefore often up against the problem of trying to make ourselves more or less familiar with a rifle we have never seen and cannot get hold of, and of explaining its design, its features, and its operation to our pupils. The task is not as hopeless as it would seem. There is a War Department manual known as "Field Manual No. 23-5, U. S. Rifle, Caliber .30, M1." * which describes the rifle so fully and clearly that any instructor or coach who is familiar with the Springfield rifle will have no trouble in understanding and visualizing it, and can then explain it to his pupils with some degree of exactness. The manual goes into all necessary details, far more than could possibly be done in any magazine article. It includes the mechanical training necessary to enable the soldier to operate the rifle and keep it in efficient working and shooting condition at all times. The system of marksmanship, coaching, gallery, and range practice at known distance targets is fully covered, as well as marksmanship at moving targets and air targets, and the technique of rifle fire. It concludes with a chapter of advice to instructors.

I would strongly recommend that every instructor obtain a copy of this manual and study it. He will find it very helpful. In fact I regard it as a "must" book.

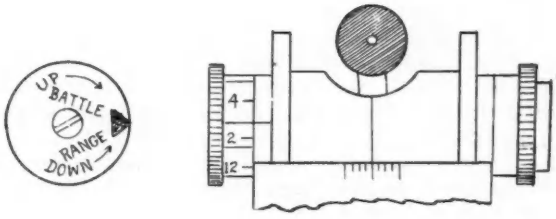
There is just one portion of the manual which may not be entirely clear to a student in the absence of a rifle to examine and operate. This is the operation and adjustment of the sights. There is also no good illustration of the sights to assist in visualizing them. I have therefore thought that this month it would be helpful to give this information on the sights more clearly for us poor unfortunates who cannot use the rifle itself.

* May be obtained from the Government Printing Office, Wash., D. C., 80 cents. Do not send stamps. Most of the information contained in it is also included in the edition of the New Infantry Drill Regulations, which can be obtained from N. R. A. Book Department, 75 cents.

The front sight on the Garand is a flat top post sight, very similar to that on the Springfield M1903 rifle except that it is slightly wider, and therefore can be seen easier in poor lights, and caught more rapidly. On either side of the front sight are steel guards, similar to the guards on the Enfield front sight, but curved outward so there is no danger of mistaking them for the front sight when aiming. These, and similar guards on the rear sight, protect the sights from injury. The Garand rifle could be dropped from a truck onto a cement road without any danger of injuring the sights, or even knocking them out of adjustment.

The rear sight is located on the top and rear of the receiver, just far enough forward so there is no danger of its striking the eye in recoil, even for a shooter who "rides the bolt." It is a peep sight exclusively, the aperture, about .10 inch in diameter, being in the center of a stippled disc which is about .40 inch in diameter. (See the drawing which is made from memory as your old coach also has no rifle available at present.) On either side of the sight base are knurled dials as shown, the dial on the right operating the wind gauge, and that on the left the elevation. The wind gauge is shown below the peep, the graduations being in points which have an adjusting value of 4 inches per hundred yards, same as the wind gauge on the Springfield rifle. The sight can be adjusted for four points of windage in either direction, i.e, for 16 inches at 100 yards, or 32 inches at 200 yards, and so on. Both the windage and elevation dials click reliably when turned, each click being a minute, i.e., one inch per hundred yards, or a quarter point for windage. The minute click is positive and accurate, and cannot develop lost motion.

The elevation dial at the left similarly is revolved to adjust for elevation and range, and is graduated in hundreds of yards from 100 to 1200 yards. Both the windage and elevation scales and the index line for the elevation scale can be seen plainly, as shown when the shooter has his head in aiming position. It is not necessary to take the rifle from the shoulder when adjusting it or to read the



scales. The drawing shows the sight adjusted for 300 yards elevation, and at zero for windage. The elevation dial also has clicks for minutes of elevation, but there is no way of recording these as minutes. You have to record elevation as, for example, "300 + 2" meaning 300 yards plus two clicks or minutes.

The drawing on the left shows the head of the elevation dial with its descriptive engraving showing which way to turn the dial to move up or down in elevation, and also a triangle showing the battle range adjustment of 300 yards. With the sight adjusted at the battle range of 300 yards the bullet of course strikes the exact point of aim at 300 yards, strikes 5½ inches high at 100 yards, 6 inches high at 200 yards, and 14 inches low at 400 yards. This is a very satisfactory adjustment for targets of opportunity,

which spring up and disappear too quickly for any precise estimate of distance or precise setting of the sight, and also for shooting at moving targets where the range is continually changing. Therefore the soldier is instructed to habitually carry his rifle with the sight set at this battle range. Note that if the enemy is 100 or 200 yards away and you aim at six o'clock on his head as though it was a bull's-eye you will not overshoot the head with sight adjusted at 300 yards, and similarly if he is at 400 yards and you aim at the center of his body you will still not undershoot him.

In the center of the elevation dial is a screw. When this screw is loosened the dial itself can be turned without altering the adjustment of the sight. Thus the soldier can shoot and determine his zero for that distance, say 200 yards, and if this adjustment does not correspond with the 200 yard graduation he can loosen and turn the dial until it does correspond. Then the graduations on the sight will agree with elevation for each distance.

On recent issues of the Garand rifle there is a thumb nut on the wind gauge dial. When this is screwed up tight the sight is clamped and cannot be moved in adjustment until this nut is loosened. This enables the cavalryman to clamp his sight at 300 yards for elevation and zero for windage with the assurance that no amount of saddle holster usage will change the adjustment. There is little likelihood of the sight being accidentally changed in adjustment, however, because the indents for the clicks are so strong and positive that the dials seldom get turned.

Aim with these sights is taken exactly the same as with all other open front and aperture rear sights, that is, the top of the front sight is aligned in the center of the aperture. Aim is very like that with a typical Lyman rear sight. The aperture appears in a thin black ring, and unlike sights with big target discs, the target and its surroundings are clearly visible with scarcely any disc interference. It is possible to use the sight in very dim lights, and to catch aim on rapidly moving targets.

Taking it all in all, your old coach thinks these sights are the best military sights he has ever seen. They are sturdy, quick to use, and extremely simple. And they are accurate too. With them the Garand rifle shoots just about the same as the issue Springfield. Selected Garand rifles, perhaps one in five or ten corresponding to the National Match Springfields, with the best of ammunition similar to National Match ammunition, easily will hold the bull at 600 yards. Study up on the Garand, and pass the dope along to every man entering the service.

GREY GHOSTS OF THE TIMBER

(Continued from page 16)

killed a fullgrown rhino with a geologist's pick, but not even he, grim, fearless, old tiger of a man that he was, would recommend such doings as a daily chore for himself or anyone else.

All of which is getting somewhat away from the original topic of mule deer. There is a lot of fable mixed up with mule deer lore. Particularly relating to size and weight. I, for one, am a trifle skeptical about these staggering dressed weights so glibly reported. I'm calling no man a liar, but I'm strictly from Missouri on a lot of this 300 to 350 pound stuff. I've got to see it on a real scale to believe it! So far, I haven't been able to.

A good mule buck can look tremendous. The size of his horns can give an exaggerated impression of the bulk of the deer as a whole. But the scales can be pretty cold blooded. The first mule deer I ever killed looked so darn big in comparison to the small coastal blacktail, I was ready to start talking at least 275 pounds. Alas! The scale said exactly 185.

I've seen 'em go better than 200 and a little more. But not often. A few years ago I wrote Jonas Brothers, the world famous taxidermy house in Denver, about this weight proposition. They said they had reason to believe that a mule deer buck dressing 310 pounds had been killed, though the occasion was not fully authenticated. They agreed that this was very, very exceptional and that the average would run far below that figure, even in the state of Colorado, where the Biological Survey has established the fact that the mule deer grows to its greatest size and development.

I recall a mulie we hung up at Pease Cabin in the Devil's Garden, a mighty nice buck with a really good head of horns of very heavy beam. There were several other camps of hunters there as the spring at Pease Cabin was the only water thereabouts for several miles. The hunters gathered around to look the buck over and an impromptu weight guessing contest started. The guesses ran all the way from 235 pounds to that of a bug-eyed beginner who swore it would be 300, not an ounce less. I was hunting with an old timer who grinned as he brought out the scales and said, "I'll eat raw, every pound of this buck over 195", which statement brought forth a chorus of laughs and scoffing. Yet it turned out he was 5 pounds on the safe side. The buck went exactly 190.

There you are, gentlemen. The Rocky Mountain Mule Deer (Odocoileus hemionus hemionus). He's as big as his name, but not as big as the imagination of a lot of hunters. A truly big game quarry, a noble fellow and a real trophy. Incidentally, the world's record mule deer head taken in Colorado (1940) had a spread of 46⅞ inches. The points, 35. Magnificent? You bet!

I'll close with the story about a ranger whom I still want to meet, so that I can shake his hand. It happened thusly:

The ranger was checking up on some hunter camps. In one he noticed an ordinary .22 caliber plinking rifle leaning against a tree. Now here in California, during the mulie season, there is no open season on anything else which could justify the presence of a .22 rifle in camp. So the ranger asked who the gun belonged to. One of the hunters said it was his. The ranger asked what he expected to shoot with it. The hunter said he intended to hunt deer with it. The ranger said, "Let me get this right. You say you expect to hunt mule deer with that dinky little pip-squeak of a cartridge?" The hunter said he certainly did, and what about it. "Just this, mister," the ranger replied, "if I run across you outside the limits of this camp, and you got that gun along I'm going to peel off this badge of mine and then, man to man, I'm going to kick hell out of you and bend the barrel of that rifle around your dumb skull besides."

Do you wonder that I want to meet that Ranger and shake his honest hand?

POWDER SMOKE: READERS COMMENTS THE NEWS DESK

RE-LOADS . . .

COMPLAINT FROM THE ARMY

Editor, American Rifleman:

I am a Staff Sergeant in the Army Air Corps now stationed at the Pueblo Air Base though my permanent home is in Exeter, N. H. My Dad and I have been members of the NRA for quite a few years.

I am an ardent hunter and fisherman and have been getting real angry lately when I walk into a city hall to buy a license. They try to make me buy a non-resident license that costs anywhere from fifteen to fifty dollars. I usually get into a heated argument and walk out with blood in my eyes. My argument is that I am in the Army and my home is where the Army sends me. I have no control over the situation. Now does it seem fair to keep a soldier from enjoying his favorite pastime? We only get one twenty-four hour pass a week so that only allows us four days hunting and fishing a month. I wouldn't mind buying a regular license because I know that it helps keep up the conservation program.—*Staff Sergeant A. F. Blinn, Pueblo Air Base, Pueblo, Colo.*

FROM DOWN UNDER

Editor, American Rifleman:

As the exchange regulations now forbid the importation of THE AMERICAN RIFLEMAN into Australia I will be much obliged if you will put copies by for me until such time as these regulations can be lifted as I intend to resume my subscription as soon as possible. I credit 95 percent of my success in shooting to your journal.

We are very busy here at present. I am in the V. D. C., which is equivalent to the British Home Guard, where I will be able to use my shooting skill to advantage if necessary. We are very keen in the V. D. C. and hope to evolve into quite a useful force.

We are still shooting a few competitions and matches with older members and lads we are teaching to shoot.

I hope soon to be able to receive the RIFLEMAN once again and in the meantime wish all of you the best of luck and good shooting.—*F. B. Brine, Victoria, Australia.*

INDIA IN NEED

Editor, American Rifleman:

Please accept our most cordial thanks for the continued help you have given the Association for the Preservation of Game by sending THE AMERICAN RIFLEMAN regularly to the office. It has been responsible for creating an altogether new spirit in our friends. The spirit of your sportsmen will serve as a beacon to the sportsmen of India.

We have now formed the All-India Sportsmen's Brotherhood and are forming District Committees to start shooting clubs to train sportsmen to carry a war of aggression against the yellow peril which has threatened the safety of India and has launched unprovoked attack on the United States of America.

We need most the support of your wonderful organisation and THE AMERICAN RIFLEMAN in helping the Brotherhood and to obtain books, periodicals, instruction charts and latest information of all aspects of firearms technique. It needs hardly an assurance that by keeping the Brotherhood abreast of your progressive movement, technique and literature you will be preparing marksmen on this side of the world to shoot Japs, Germans and Italians. India also is sending out her sons to the many theatres of war.—*Hasan Abid Jafry, Honorary Secretary, All Indian Sportsmen's Brotherhood, Lucknow, India.*

HUNDRED PERCENT WRONG

Editor, American Rifleman:

I would like to direct your attention to an article appearing in the December issue of *Popular Mechanics* entitled "Sighting in Your Rifle."

The illustrations showing the various shooting positions and the use of the sling are 100% wrong. It is a shame that an author with as little knowledge of the subject and with so much misinformation is permitted to get into print.—*C. R. Conkling, 30 Park Circle, Great Neck, N. Y.*

LEATHER MEDALS

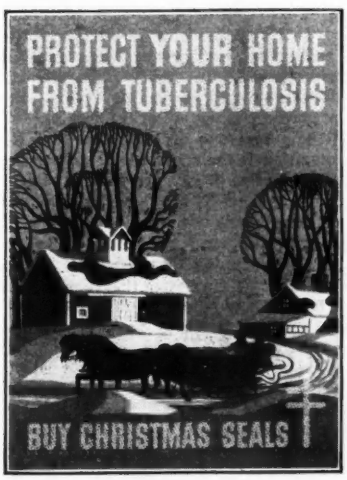
Editor, American Rifleman:

In the past leather medals have always been for the fellow that pulls the prize boner, so when Arnold L. Meloche, president of the State Pistol Association of Arizona, wrote me suggesting making up leather medals I thought that he was kidding. The fact that metal medals are not to be had got me to thinking that perhaps Al had something. Anyway we had to have awards for the Registered Pistol Tournament at Tucson September 20.

Using Al's suggestion, ideas began to form. I made a few experiments and mailed him a crude sample. After more suggestions from Al here is how we made the leather medals.

A few years ago the Arizona Pistol Association used medals made by the Meyers Company of Los Angeles. I took one of these bronze medals and cut the eye off the top and then wrapped a piece of light weight

(*Continued on page 40*)



TIMED FIRE
With Bill Shadel

We're enjoying the response to our column last month in which we were able to locate some of our fellows with those new titles in front of their names now in the service. Here are some additional names: *Lt. Col. Noval H. McDonald* of Pikesville, Md. Armory writes from somewhere in Africa, "The native children greet all Americans with a 'Hello, Joe', so whoever receives this say 'Hello, Joe' to all who remember the one-time dental officer of the old 110th Field Artillery." He's helping plenty as an instructor in off hours. *Captain Ray Louden,* Pennsylvania small bore shooter, member of Dewar teams, American Legion, and Camp Perry attendant for many years, "I think it is swell for you to have a column—regarding NRA men in the service." He's at Ordnance' Aberdeen Proving Ground. *Chief Signalman Kurt R. Groote,* at present rifle and pistol instructor of Naval Science Dep't., Harvard University. *Captain C. J. Derrick,* author of recent RIFLEMAN article, "Spectre of Tomorrow" at the Air Force Gunnery School in Nevada. An NRA referee, *J. R. Martin* of Wichita Falls, Texas, 1st Lieutenant in the Air Corps now at Langley Field, Va. Another Air Corps Officer, *Lt. D. M. Demarest,* at Gowen Field, Idaho, formerly of the Carlstadt Legion Rifle and Pistol Club. From Chief of Police M. H. Miles of Sparrows Point, Md. mention of three pistol team members well known to Eastern shooters, *Charles Lipscomb,* Warrant Officer, *Arthur F. Lotz,* 1st Class Machinist Mate, *Joseph Schuchman,* 1st Class Yeoman, all in the Coast Guard.

Small-boresman *Vic Massie* of Los Angeles, President of the State Ass'n; *Jess Burger,* Drumwright, Okla.; *Freeman Kent,* Mountainside, N. J.; *L. J. Jeffrey,* Fresno, Calif., Warrant Officers and *Gene Farren,* Houston, Texas, Lt. j.g.—all assisting Lt. Commander Randle at Navy Training Center, Newport. Keep these new notes coming. We need the reminders—to keep up with our NRA service record.

General Julian Hatcher, "Hero without Headlines," quoting from Drew Pearson's Blue Network Broadcast, October 11—"The War Department—tonight, I want to nominate a Hero without Headlines, who in a very quiet way did a great job for his country. He is General Julian Hatcher of Army Ordnance, who some years ago at Frankford Arsenal developed a new tracer bullet which lights up its target, and shortly afterward was astonished to receive orders from the State Department to turn this secret over to an American company for sale to Japan. This was an official order. But for once General Hatcher violated an official order. He had another secret formula for a tracer bullet, developed some months before; and without telling anyone, he gave the old formula to the Japanese. I now nominate as a hero without headlines, General Julian Hatcher who gave the Japanese this old tracer bullet formula which was perfectly good except for one thing—after the cartridges have been stored for six months, they explode."

THE JOB OF THE CIVILIAN CLUB

Expanding our armed forces to many times pre-Pearl Harbor size is a gigantic task. To accomplish it our Army is tremendously busy, but it lacks the time and instructors to give new soldiers the marksmanship training we all want them to have. There are, too, the thousands of recruits in Home Guard units and the personnel needed to guard hundreds of important war plants against sabotage—all in need of firearms instruction. Much of the huge job of training men for these duties must fall on the civilian small arms firing schools. Some of it already has. But there is no end to the work to be done.

The National Rifle Association's plans for a uniform nationwide basic training program through approved schools conducted by the local rifle and pistol clubs already are taking shape. A fairly large number of clubs are conducting such schools and reports received at National Headquarters indicate this instruction is enthusiastically received everywhere it has been offered. It is the purpose of this article to bring clubs and members up to date on the entire setup.

A large number of clubs have found themselves swamped with applicants for instruction. In such cases priorities must be established. Men already in or eligible for active military service rate number one. Don't forget to include 18 and 19 year old boys. Next comes the members of Home Guard or Minute Man units and plant or industrial guards. Only after these persons are trained should the school turn to the remaining civilians whose interest in firearms has been stimulated by the war. It's true that this latter group will furnish new club members but first we have a war to win.

There are three general types of schools depending on the arm used—rifle, pistol or shotgun. Obviously the majority of schools will be conducted with the rifle. However, guards and auxiliary police may need pistol instruction while some plant guards and state guard units are armed with shotguns. The N. R. A. will approve any of these three types of schools and can supply the necessary plans for conducting them.

As soon as your club has decided to conduct a Small Arms Instruction School write the N. R. A. and ask for literature covering the type or types of schools you plan to conduct. You will be sent a copy of the instruction manual for the arm to be used, a plan for the organization of your school and application forms for N. R. A. approval. Separate applications should be submitted for each type of school. N. R. A. approval will remain in effect as long as classes are being conducted under the plan approved. Information given on the application will be used as the basis for approval or disapproval. Note that it is not necessary for the Instructor or his assistants to already hold the new N. R. A. Instructor certificates. They may be obtained later. As soon as the school has been approved the Adjutant will be sent information and forms enabling him to make the proper reports to the Association at the conclusion of each series of classes and to report the qualifications of the class members. He will be advised to order the necessary number of N. R. A. Attendance Certificates to be issued to the graduating members of each class at their last class period and will furnish a list of such successful graduates with his report.

The material now available through the Association for such schools includes basic instruction manuals in the use of the small bore rifle, pistol and revolver, and shotgun. Sets of large wall charts for rifle instruction are available and cover the subjects of rifle and ammunition nomenclature, firing positions, sling adjustments, the clock system, sights and sight adjustment and safety rules. Each school should have a set of these charts which may be purchased for $1.00.

NRA BASIC TRAINING PROGRAM

84 Schools Approved

833 Attendance Certificates

equals

1 Battalion *plus* 1 Company

THE OBJECTIVE IS 27 RIFLE DIVISIONS!

What Is Your Club Doing?

Two 16mm. training films, covering rifle and pistol instruction, also may be obtained. They are the four-reel "Fundamentals of Rifle Marksmanship" which rents for $5.00 and the three-reel "Pistol Bullseyes" which rents for $3.75. Requests for booking dates should be made as early as possible as these excellent movies are in great demand.

Packets of forms designed to help the Adjutant in keeping proper school records include the large progress chart, ten Instructor report cards and fifty school registration cards. Each packet contains the forms needed for a class of up to fifty shooters and costs 50 cents. A chart for shotgun instruction is now being prepared. Attendance Certificates are already available and will be furnished at the request of the Adjutant of each approved school in the number needed. No charge is made for the approval of any school nor for the Attendance Certificates issued. In addition to instruction material any club conducting such a school may purchase ammunition through the Association in case lots of 10,000 rounds. This ammunition is the standard .22 caliber Long Rifle and costs $59.50 per case. The initial order is limited to one case but provisions have been made for reordering where the need is greater.

At the conclusion of each school or series of classes it is suggested that the members fire for the new school qualifications. Separate qualification courses have been designed for rifle, pistol and shotgun schools. Lapel pins may be purchased by those shooters meeting the required scores for pistol qualification, while Certificates may be purchased by rifle or shotgun shooters. Metal shortages have made it impossible to supply other decorations. The Adjutant of each school is furnished complete information and forms regarding this qualification firing.

Many persons have requested information and endeavored to make applications for the new N. R. A. Instructor Certificates. The requirements for the issue of such Certificates include a certain number of actual hours of instruction work and the completion of a written examination prepared by the Association. The Instructor and his Assistants while serving in the Small Arms Firing Schools are automatically amassing the necessary instruction hour credits. Examinations will be mailed upon request to applicants.

Each month a page of the AMERICAN RIFLEMAN and of the Club Bulletin will carry the score box showing the progress being made in this training program. It will be noted that we are translating the results into the approximate military terms. Our objective for the next twelve months is to have enough persons graduating from these schools to fill twenty-seven Rifle Divisions or approximately one-half million men. The sights have been set high but only because we do not want to hear a repetition of "too little and too late." No other shooting activity is more important than this program and it must be successful.

(RE-LOADS—*from page 39*)

cardboard, about three quarters of an inch wide around the medal, forming a cup. Around this cup plaster of paris was placed and allowed to dry. When this was thoroughly dry (and this is important) I filled this cup with a very hard mixture of bullet metal using plenty of antimony. After a few trials, breaking in the medal as you would a bullet mould, I produced a die that made satisfactory impressions when pressed into leather.

A line-o-type operator made up the necessary headings for me. Then began the experiments on a press. For this I used a large bench vise. I constructed a form on the stationary jaw to hold the pieces of leather. I made two removable jigs for the movable side of the vise, one for the Association die and the other to hold the lines of type. I had to put the die in upside down, due to the lack of space from the top of the vise jaw to the screw that operates it. The piece of leather was then reversed and the type impressed rightside up as it was on the bottom of the medal.

These medals were about 2¼ inches by 3¼ inches, all the same size to fit the holder. I soaked a dozen or more at a time and spread them out to dry. When they were almost dry I made the impression with the die. The operation was simple. I placed a piece of leather in the holder and the die in the jig on the opposite jaw and screwed the handle of the vise as tightly as possible, leaving it closed about half a minute. After running a bunch through I replaced the die jig with the one for type and impressed the headings below the seal. This latter operation requires considerable care so that you will not get the impression of the type too deep, yet deep enough. A little practice with some pieces of scrap leather will soon give you the correct pressure to exert on the vise handle.

Eight ounce saddle leather was used. The edges were rounded with a regular edging tool and then lightly dampened with water and buffed smooth with saddle soap.—*Howard Hathaway, Tuscon, Ariz.*

NEW BOOKS:

THE DUCKS, GEESE AND SWANS OF NORTH AMERICA

Every now and then there comes to our attention a book that merits more than the casual passing review. Such a book is the one just released by The American Wildlife Institute.

"The Ducks, Geese and Swans of North America" is all that its name implies. Naturally, other books have covered the same subjects innumerable times, but we believe that this is the first time such a book has been written for the sportsman by a sportsman and published by an organization whose primary concern is the unending perpetuation of American wildlife.

Not only is this book complete in its coverage of all the species of waterfowl found on the North American continent, but it also contains full-color illustrations of each of them. True, other books have done the same thing, but never to our knowledge, has one attempted to portray the waterfowl in all of their various plumage phases throughout the year. Not only is the mallard, for example, depicted in its gaudy, well-known, breeding garb, but also, it is shown in its "eclipse" or "post-nuptial" plumage during which period the wing feathers are shed, rendering the duck incapable of flight—"floppers" as the Eskimos call them. This alone would be an interesting addition to the sportsman's library, but the book does not stop there. Other full-color portraits illustrate the successive plumage changes right on around the calendar.

Where words become involved and most books leave off, this book carries on with masterful drawings. In addition to the 36 meticulous color plates, there are more than 200 original black and white line drawings, a hundred maps of breeding and wintering grounds, flyways and refuges, and nearly 500 pages of scientifically accurate, analytically concise and entertainingly written information.

Published by The American Wildlife Institute. Cloth-bound $4.50 (Canada $5.00). Full Morocco-bound $10.00. Available from NRA Book Department.

THE MUZZLE LOADING RIFLE—THEN AND NOW

By WALTER M. CLINE

Sponsored by the National Muzzle Loading Rifle Association this book is, at one time, a memorial to Author Walter Cline and a frank hymn of praise for the muzzle loaders, the men who made them and the men who used them.

Dyed-in-the-wool shooters of the "smoke pole" will find much to interest them in this medley of technical data, American history, hunting experiences and pure romanticism, heavily colored by the author's ardent admiration of everything "pioneer."

The technical information suffers somewhat from lack of detail but the chapters dealing with the development of the rifle from early times and the history and methods of many little known gun makers, past and present, bear witness to the author's knowledge and patient research. The many plates of match and hunting rifles are excellent and valuable to any collector. Some of the pictures of old-time gunsmiths and match and hunting scenes are interesting from a historical point of view.

Walter M. Cline was well known in the fraternity of muzzle loading match shooters and was, from youth, a collector and ardent student of the type of long rifle made famous by men like Daniel Boone and David Crockett. He was unfortunately killed in an accident involving one of his rifles when the manuscript of this book was still incompleted.

The author's wife and editor-publisher Herman Dean are responsible for the appearance of the book in its present form.—F. C. D.

Published by Standard Printing and Publishing Company, Huntington, W. Va.

FOR PERMANENT VICTORY

By MELVIN M. JOHNSON, JR.
and CHARLES T. HAVEN

The co-authors of "Automatic Arms" have done it again; this time a sketchy and broad-view American history of ordnance, highlighting its respective ups and downs in war and in the interludes. It is chronological in arrangement, beginning with our beginning as a nation and so new it refers to our recent naval operations in the Solomons of last August.

It is a truthful record of our unfailing failure to adequately prepare in time for every war we have had to fight. It is the story of our consistent good fortune which has enabled us to "luck-through" each self-made military crisis of every war in the past. It is an argument for practical National foresightedness. It is a plea for a more realistic American attitude toward the inevitable, with a suggestion for the future. It is, in short, a serious message for all Americans.

It is tedious only in spots. In fact, I read it in one sitting and that an unusually long one for a book of this length. It makes charges forthrightly, but its criticism is constructive and it lays blame without bitterness. Its implications and indictments may be unpleasant, but they all seem obvious and warranted. The book is as frank as it is earnest about our ineptitude as a people, with startling statements that will shock some readers. It is sharply studded with ungloved punches aimed at those at fault. Although avowedly non-political it praises certain groups of far-sighted technical and military strategists, and it exonerates the War Department, while blaming the apathy of the people and their Congress.

The book is informative in the matter of historical and military gun lore, covering small arms, machine guns and artillery as well as tanks and planes. It is sufficiently scientific and comprehensive and adequately accurate for its purpose, but it could have been better edited in spots. On the whole it deserves wide reading and thoughtful appraisal of its declaration that we have won all past wars chiefly through fortuitous circumstance. —F. C. N.

Cloth, 246 pages, $2.50, William Morrow & Co., 386 Fourth Avenue, New York City.

GALLERY LEAGUES CANCELLED

A few days after the November issue reached our readers carrying announcement of plans for the 1942-43 NRA Gallery League Series it became necessary to cancel those national team competitions possibly for the duration of the War. There were three reasons for this sudden change:

1. Shortage of clerical help in Washington to carry out the many details necessary to properly handle the competition through this office.

2. Shortage of ammunition and the fact that we are not justified in operating gallery competition with the .22 caliber ammunition made available to us by the Government for training purposes.

3. Uncertainty of obtaining suitable awards.

It is hoped, however, that the plan as outlined in the November issue will be carried out as far as possible by the leagues or clubs, themselves.

James William LeBar

The Douglas Rifle and Pistol Club, the Wyoming State Rifle Association and the entire shooting sport lost one of their most faithful followers in the death October 21 of young Jim LeBar of Douglas, Wyoming. The 26-year-old sportsman died suddenly at Thermopolis of a cerebral hemorrhage when it appeared he was showing marked improvement over the ill health he had experienced during the past six months.

Jim was known throughout the State and the Rocky Mountain region as an outstanding marksman. Shooting was his hobby and he won numerous state and national honors. In 1939 and 1940 he was a member of the Wyoming team at the National Matches and accumulated several awards. Last year he was Wyoming State Gallery Champion.

Recently elected secretary of the Douglas Rifle and Pistol Club, Mr. LeBar was one of its original members and devoted much time to the organization and its promotion. Through his efforts several outstanding matches were secured for Douglas. He was past secretary of the State Association.

Watson

M. J. M. Watson suffered a double-barreled blow when his wife, Ruth (born 1899), died on Labor Day and his father (born 1868) passed away a week later, both in Toronto, Ontario. Ruth Watson, well known for her fine sportsmanship, was a welcome small-bore participant with her husband in Canadian and American tournaments, in club matches and on the Watson's home range. One daughter, Eleanor, survives her.

Thomas A. Watson was widely known in shooting circles as an inventor and manufacturer of rifle sights and as the founder of the Watson Gun Sight Company. Although his trade was watch making, he was a shooter and an experimenter with fine rifle sights which hobby developed rapidly into a business that soon forced him to give up his watch business. He pioneered the small flat-face sloped bead and the use of 22-carat gold in front sights, the interchangeable aperture-disc front sights and the thin diaphragm apertures for rear sights. Watson target sights were used by many winners of the Kings Prize at Bisley. John W. Hession, of Winchester, won one of his major championships with Watson sights. His son, Mervyn J. M. Watson, will continue the sight business.

A. B. Weseman

A. B. Weseman, 70, well known collector and gunsmith, died at his Austin, Minnesota, home on September 13. "A. B." as he was known to his many friends, had one of the most extensive firearms collections in the State.

As a gunsmith, A. B. Weseman was a craftsman of great skill and long practice, was an active shooter up to the last and keen for competition in spite of his years.

STOLEN GUNS

Colt Officer's Model heavy barrel with King cockeyed hammer, Serial Number 643105.

Hi-Standard Model HE with King Rib Sight, Serial Number 43262.

Both of above guns were in shooting case with Argus 55mm. spotting scope and accessories. Stolen from Pvt. W. A. Linehan, Marine Barracks, Naval Air Station, Alameda, Calif.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933

Of THE AMERICAN RIFLEMAN, published monthly at Washington, D. C., for October, 1942.

District of Columbia, ss:

Before me, a notary public, in and for the State and county aforesaid, personally appeared C. B. Lister, who, having been duly sworn according to law, deposes and says that he is the Managing Editor of THE AMERICAN RIFLEMAN, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher: National Rifle Association of America, 1600 Rhode Island Ave., Washington, D. C.

Editor: W. F. Shadel, 1600 Rhode Island Ave., Washington, D. C.

Managing Editor: C. B. Lister, 1600 Rhode Island Ave., Washington, D. C.

Business Managers: Executive Committee, National Rifle Association of America, 1600 Rhode Island Ave., Washington, D. C.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

National Rifle Association of America. 1600 Rhode Island Ave., Washington, D. C. No stockholders.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is... (This information is required from daily publications only.)

C. B. LISTER, *Managing Editor.*

Sworn to and subscribed before me this 19th day of October, 1942.

LOUIS Q. BRADLEY, *Notary Public.*

(SEAL)

My commission expires May 14, 1946.

FOR A SHOOTER'S

Merry Christmas

★ ★

A Book—On Soldiering—On Shooting

Infantry In Battle	$3.00
Complete Tactics Infantry Rifle Battalion	.75
The Bullet's Flight—Mann	6.00
Shells and Shooting—Ley	2.00
Bombs & Bombing—Ley	1.25
Civil Air Defense—Prentiss	2.75
Civilian Defense of the U. S.—Dupuy-Carter	2.50
Guerilla Warfare—Levy	.25
Skilled Defense—Mitchell	4.00
Spectre of Sabotage—Matthews	3.00
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The Officers Guide	2.50
The Old Sergeants Conferences	.50
.22 Caliber Rifle Shooting—Landis	3.75
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English Pistols and Revolvers—George	4.00
Big Game Rifles and Cartridges—Keith	1.50
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Modern Shotguns and Loads—Askins	4.00
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Big Game Hunting and Marksmanship—Lee	2.00
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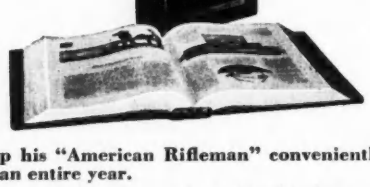
Handloader's Manual—Naramore	3.50

A Rifleman Binder



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NATIONAL RIFLE ASSOCIATION

SCOTT CIRCLE **WASHINGTON, D. C.**

DOPE BAG ☆ ☆ ☆ Conducted by F. C. NESS

THIS MONTH:

8-mm. Mauser · 8-mm. Mannlicher · 8-mm. Lebel · 8-mm. M.-S. · .33-50 O'Neil · .333 O'Neil · .334 O.K.H. Magnum · .33 Winchester · .333 Jeffery's · .33-40 S.-S. · .257 Range Table · .30-Caliber Handload · Improved Bullets · Kinks · Trade Dope Letters

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The 7.9- or 8-mm. Mauser is actually a 7.85 X 57-mm., the second figure denoting the case length. It is a bottle-neck cartridge whose rimless base fits interchangeably in .30-'06 bolt heads, but whose bullet is a little larger than that of the .32-40. It is the German military cartridge for M-1898 Mauser rifles, but it is worthy of inclusion in this cartridge series because it is fairly popular as an American sporting load. About the best American-made hunting load for a blind choice is the 8-mm. Mauser Special, loaded with a .322-inch 170-grain S.P. bullet to about 2500 f.-s. m.v. This is a soft-cored bullet of comparatively light construction, so designed to expand or swedge down readily in order to compensate for high and low discrepancies in groove diameters (from the average .323 inch) frequently found in different German barrels.

This special load has been featured for years by Remington and the Peters Cartridge Company. Winchester has a Super-Speed load with a boat-tail 170-grain S.P. bullet at 2530 f.-s. m.v. It has 2210 f.-s. remaining at 100 yards, over which range it drops 3.2 inches. Over 200 yards the drop is 14 inches, and a full yard at 300 yards. The standard 8-mm. sporting load is a 236-grain S.P. bullet at 2100 f.-s. m.v. and 1850 f.-s. at 100 yards. This heavier and slower bullet drops 4.4 inches over 100 yards, 20 inches at 200 yards and 48 inches over 300 yards.

My friend, the late Mr. Goddess, had a fine Sedgley Sporter in 8-mm. Mauser caliber with a short barrel stocked full-length to the muzzle. It was a fine looking arm, very quick and handy in the woods and as accurate as our .30-'06 rifles on the testing range. For it I developed an accurate reduced load of 16 grains No. 80 behind a B. & M. .32-40 lead-alloy bullet, for small game. It had the most desirable groove diameter, or .323 inch. The factory loads are good for deer and black bear, the .236-grain load being equivalent to the 220-grain Krag load and the 170-grain load equalling the power and trajectory of sporting handloads in the .30-40 Krag, .300 Savage and .30-'06 with the 170-grain .30-30 bullet.

When 8-mm. ammunition is listed "For Mauser and Mannlicher Rifles" it is the milder 8-mm. Mauser load adapted for M-1888 Mausers and also Schilling and Haenel Mannlichers of this caliber. These arms are about on par with our Krags in strength, with actions built for pressures below 45,000 pounds chamber pressure. While this same 1888 ammunition can be fired in the 1898 Mausers, that more powerful stuff indicated "For Model-1898 Mausers" could not be safely fired in the 1888 arms mentioned above. The old load for 1888 arms had a 226-grain round-nose bullet at Krag-rifle ballistics. The modern 1898 load drives a 154-grain pointed bullet at .30-'06 velocities.

In foreign ammunition there are various different 8-mm. cartridges both rimmed and rimless. In the bottle-neck type these range from the short 8 x 50-mm. rimmed for the M-1895 Steyr straight-pull Austrian military rifle and the short 8 x 51-mm. rimless to the 8 x 57-mm. rimmed. There is the little straight-taper 8.15 x 46-mm. rimmed, and the 8 x 58-mm. rimmed which also has a straight-taper case. At the other extreme is the 8 x 64-mm. bottle-neck rimless which in ballistics is the equivalent of our .300 Magnum. The latter are used in the superior rib-guided special Mauser sporting bolt-action or the clumsier Magnum Mauser action. Outside of this, the longest 8-mm. loads I have seen listed are the 8 x 60-mm., 8 x 65-mm., 8 x 72-mm. and 8 x 75-mm., which need only bare mention here. Most of these have been listed in Stoeger's catalog.

* * *

The 8-mm. Lebel cartridge for French Lebel military rifles has a well-shaped solid bullet of gilding metal. For American sport, Remington loads it with a 170-grain S.P. bullet at 2550 f.-s. m.v. whose bullet-drop over 200 yards is 14 inches. This is a rimmed bottle-neck fatter and shorter than the 8-mm. Mauser. It is mentioned here merely for distinguishing purposes. Ballistics have also been quoted at 2610 f.-s., with respective bullet drops over 100, 200 and 300 yards of: 2.8, 12.0 and 34 inches.

* * *

The 8-mm. Mannlicher-Schoenauer, or 8.2 x 56-mm., is not adapted for 8-mm. Mauser rifles, although an American sporting load is available. The case body is 1-mm. shorter and in the 8-mm. Mauser chamber the headspace would be too great. Western Cartridge Company loads it for proper M.-S. rifles with a 200-grain S.P. bullet at 2167 f.-s. m.v. It loses 247 f.-s. over the first hundred yards and drops 4.16 inches. The 200-yard drop is nearly 19 inches. At 300 yards it is 48 inches. This is a rimless bottle-neck cartridge for 8-mm. Mannlicher-Schoenauer rifles, and not for 8-mm. Mauser rifles.

* * *

The .33-50 O'Neil is an American wild cat designed for 8-mm. Mauser cases by Charley O'Neil. The bullets were made by Fred Barnes in 250-grain weight and of pointed shape. It transforms a good military bolt-action rifle like the M-1898 Mauser into an Elk gun. I carried one in the Rockies above 9500 feet altitude in 1940 and was pleased with its light weight and latent power when climbing through four feet of snow in Elk country. The common weight is only 8½ pounds. For this .33-caliber the 8-mm. barrel is rebored, rifled and chambered.

The bore diameter is .333 minimum and .334 maximum with a rifling twist of one turn in ten inches. The m.v. is 2400 f.-s. with the 250-grain bullet and 2000 f.-s. with the 300-grain bullet, both made by Barnes before the war. The highest m.v. reported has been 2450 f.-s. with the 250-grain bullet which I used. In the mountains I tried it roughly for relative impacts. With the 330 Weaver zeroed at 200 yards the bullet landed about 15 inches low at approximately 300 yards. That is about the same as the 180-grain bullet in the Krag and the 220-grain bullet in the Springfield or like the relative impacts of the .348 Winchester with 150-grain and 200-grain Super Speed ammunition. The accuracy report on the .33-50 O'Neil showed some 5-shot groups as small as 1½ inches at 100 yards and one of 3 inches spread at 200 yards.

* * *

The .333 O'Neil is virtually the same thing on the .30-'06 case, using good strong bolt-action rifles for the conversion job, as this one is more heavily loaded and more powerful than the .33-50 O'Neil. According to Elmer Keith, straight loads are better than O.K.H. Duplex loads in this particular cartridge, which, he says, exceeds the remaining power of the .35 Whelen, .35 Newton and .375 Magnum at long range. The loads used for maximum power are: 57 grains No. 4064 with the 250-grain pointed bullet (2635 f.-s.), 60 grains No. 4350 with 275-grain Spitzer bullets (about 2500 f.-s.) and 62 grains No. 4350 with the 300-grain blunt-nose bullet (2400 f.-s.). I have never seen or fired this wild cat, but got the dope directly from Keith and Barnes.

* * *

The .334 O.K.H. Magnum is built on the .300 Magnum belted case with a long neck and an abrupt shoulder. Keith says it is different from anything on the market. Velocities run from 150 to 200 f.-s. above those of the .333 O'Neil. One load was 73 grains of No. 4350 behind the 275-grain Spitzer bullet. Referring to this load Keith mentions inch holes through the shoulder of tough goats, and kills at 450 and 500 yards, respectively. I know only what Keith has told me about this one. See Keith's story, page 20.

* * *

.33 Winchester is our only American standard sporting cartridge in this odd caliber. It is a rimmed bottle-neck for Winchester Model-1886 lever-action rifles and a good timber caliber for big game. I have heard deer hunters condemn it as a meat-spoiler. The load is a 200-grain S.P. bullet at 2180 f.-s. m.v., which has 1870 f.-s. remaining at 100 yards, where the bullet drop is 4.4 inches or about like one 8-mm. Mauser load. The 200-yard drop is 20 inches. It is 54 inches over 300 yards. Virgil Richards habitually impressed the natives with the dense-cover effectiveness of this Winchester combination. One of his annual stunts at his Pennsylvania hunting camp was to blast thrown pennies and other small flying targets with his pet .33 Winchester, during those years while he represented the makers.

* * *

Other .33 Cartridges. The British .333 Jeffery's deserves mention here. It was a bottleneck cartridge made rimless for bolt-action rifles and also rimmed for double rifles and S-S. actions. Heavy bullets were

used, notably the 300-grain blunt S.P. and the pointed 250-grain. There was also a .33-caliber belted cartridge by B.S.A. with a 165-grain bullet. According to Stoeger's catalog this was loaded with 60 grains of nitrocellulose to a velocity of 3000 f.-s. in a 28-inch barrel. The loss over 100 yards was 320 f.-s.

The same reference lists heavier loads for the rimmed .333 Jeffery's of 62 grain smokeless (49 grains Cordite) with the 300-grain bullet at 2150 f.-s. m.v. and 67 grains nitrocellulose with the 250-grain bullet (2400 f.-s. m.v.). The latter falls off to 2215 f.-s. at 100 yards, and the 300-grain bullet to 1930 f.-s. The more powerful rimless cartridge uses 65 grains n.c. behind the 300-grain bullet (2200 f.s.) and 70 grains with the 250-grain (2500 f.-s.). The latter has 2310 f.-s. remaining at 100 yards and the former, 2039 f.-s. The rimmed case was 2½ inches long and was used in 9¼ pound double rifles at above velocities.

There are odd target cartridges which we have tried in this caliber such as the .33-40 for heavy-barrel S.-S. rifles. This one will be treated more fully when we reach it in this cartridge series.

The .33-40 S.-S. Needing a Union Hill Ballard for our collection and wanting an example of A. W. Peterson's workmanship, I bought one, in .32-40 and .22 Long Rifle caliber (extra Peterson .22 Match barrel), when I visited his Denver shop. This rifle was shown in the March Dope Bag this year. It was chambered for the .32-40 case, all right, but the groove diameter was .336 inch and required .33-caliber bullets. We solved this problem by getting a different mold and seating the bullets ahead of the chamber.

The interchangeable .22-caliber barrel seemed to prefer Lesmok and Semi-smokeless, but two smokeless loads made 1½ inches at 100 yards. These were Leader and Expert. The best average was with EZXS, or 1.27 per ten, and the best 10-shot group, 0.95 inch, came with Tackhole. That was merely a preliminary test before we removed the .22 barrel, but it indicated its promise of fine accuracy, as the final 40-shot average with EZXS was 1.29 inches.

The .33-caliber barrel had the usual 16-inch twist, and from it our 210-grain Pope-type lead bullet tumbled down the range and gave keyholes and tippers in our 100-yard target with 8 to 10 grains of No. 5 or 14 grains of No. 4759. Seated ahead of the case, in the throat, these bullets landed point-on, and they spread less than 3 inches with 12.5 grains of No. 4759. Then we lapped the mold to get bullets large enough (.337-.339) and this increased the bullet weight to 216 grains. Now we had improved accuracy with 10 grains of No. 4759 and a Cream-O'-Wheat filler, or about 2½ inches spread. Without the single flier it was well under 1½ inches. Without the filler we tried 13 and 14 grains of No. 4759 and all shots would hit a 2-inch circle. They would score a possible, including a flier in each group. Eliminating these single fliers, the groups measured 1.21 and 1.12 inches at 100 yards.

We checked these loads by repeated firing with the same 216-grain bullet made of B. & M. No. 3 bullet metal, which alloy is about 85% lead and 7½% each of antimony and tin. Most of the shots (excluding occasional fliers) with this fairly hard bullet, using all loads, spread less than an inch at 100 yards. The best load was 13 grains of No. 4759 which put 8 shots in 0.98 inch, and all ten in 1.88 inches. Another good load was 12 grains of No. 80 which put 7 shots in 1.08 inches and all ten in 1.96 inches. The very best load we finally developed was 9 grains of No. 5, whose ten shots measured exactly an inch between centers. This bullet would probably do better if it were a little larger, say .340 inch. In the .32-40 Schoyen-Ballard (Pacific Model), mentioned in the November Dope Bag, our best load was 8 grains of Bulk Shotgun with ten shots in 1.08 inches at 100 yards.

Friend Jackson left his ".32-40" Pope-Stevens Muzzle-Seating barrel, and we tried it in my 44½ Stevens action. This also proved to be a .33-40 with a 16-inch twist. There were 8 grooves having a maximum diameter of .3395 inch. We tried cellophane paper-patching and various expedients to enlarge our lead-alloy bullets. The 210-grain Pope-type bullet did not tip or keyhole, and our 100-yard groups were smaller than 3 inches with 9.5 grains No. 4759 or 9.5 and 10 grains of No. 80, all with the filler. The Cream-O'-Wheat and 9.5 grains of No. 80 and 9.0 grains of No. 5 without filler both grouped smaller than 2½ inches. The best loads in this series were: 9.0 grains of No. 80 or No. 4759, both with fillers. These groups measured 1.62 and 0.98 inches, respectively.

Heavier loads of any powder gave big groups, including 20 to 30 grains of black powder with corn-meal filler. Finally, the enlarged 216-grain bullet was tried, with no appreciable improvement. Using the meal filler, 9¼ grains of No. 4759 put ten in 2¼ inches. With 30 grains of black powder and the corn meal five shots made 3.22 inches with four in 1.67 inches. All other loads made larger groups whether with fillers or straight. We used aperture sights with this barrel. It did not show enough promise for mounting scope blocks. Instead, we removed the barrel, and went back to the .33-40 Peterson reported first.

Sharp-Point Bullets. L. W. Youngberg reformed some M1 Service bullets and 180-grain .30-'06 bullets to a stream-lined shape in .280 caliber. He gave them piano-wire tips and made them needle sharp. When Keith tried them in his O.K.H. Duplex loads he called these bullets "Ozone Splitters." D. Barrett, our buffalo-shooting friend from "down-under" did the same thing with .30-caliber bullets for the .303 British using aluminum wire. When we tried Van Amburg's sharp aluminum point in the 117-grain boat-tail we did not get much improvement in ballistics over 200 yards, probably because these bullets had blunt 4-caliber heads making the aluminum tips too broad immediately behind the sharp point. This and the rearward shifting of the center of gravity or mass of the bullet must have been responsible for modifying the ballistic benefits expected from the sharp point. The chronograph tests said this sharp-point obtained a net gain of only 10 f.-s. over 192 yards, although it was very sharp and even slightly concaved behind the point. See page 31.

Reverting to Van Amburg's very accurate aluminum pointed bullet again, the thought occurs it might have shown greater ballistic improvement if reversed. A. J. Schubert's idea was to extend the boat-tail with an aluminum tip as a tail and so move the center of gravity forward. He would also use a bore-riding cylinder and a narrow driving band to reduce skin friction. This rotating ring would be at the rear end of the bore-diameter cylinder and the center of mass would be forward of the center of form. The idea has merit.

Norman Albree claims a definite improvement in ballistics for his own point improvement. This is a fairly long needle-sharp point. It is even slightly concaved along the sides behind the point, and apparently it reduces air-resistance or nose pressure to the practical minimum, besides conserving much of that bullet energy customarily consumed by forming the sound wave. Re-

LEFOR'S FILIGREE GRIPS

Filigreed Colt Grips. A. D. Lefor does some nice ivory carving, and Thomas Logeland shows them in his acompanying photos. Both are self-styled amateurs from Dickinson, North Dakota. Lefor gives Frank Mittermeier a lot of credit for his own personal success in the art, because he had no previous experience and had to rely on Mittermeier for proper tools and suggestions. Although Lefor has done many other carving jobs since he took it up, those shown are the first he has filigreed, and he believes they are unique in that respect. So do we. He does no professional carving.

maining velocities as much as 200 f.-s. higher for the Albree point have been reported. It is a clever protected design.

In one official test it was fired against the M1 Service bullet, the same type bullet having been provided with the Albree needle point. The instrumental (78 feet) velocity with the Albree 174-grain bullet averaged 2585 f.-s. for ten rounds. The high was 2600 and the low, 2563 f.-s. For both bullets the machine-rest and a heavy Mann barrel were used with an elevation of 58 minutes for 1000 yards. The 10-shot groups with both bullets were fired alternately, starting with the M1 Service bullet. The groups were slightly smaller with the M1 bullet, but the average impact was 8.71 inches below center. With the Albree needle point on the same bullet the average impact was 20½ inches higher, or 11.80 inches above center. The highest M1 group was 3.58 inches below center, and the lowest Albree-bullet impact was 5.51 inches above center.

In his .257 Roberts, Mr. Albree tried a handload from 100 yards to 600 yards. This was 24 grains of No. 4227, in W. R. A. cases with No. 120 primers, behind the 87-grain Remington bullet. He zeroed it at 100 yards with an elevation of 7.5 minutes. At 200 yards the required elevation was 11.25 minutes. At 600 yards it was 38.5 minutes. Making a curve from these points on his special graph he found he would need 16.5 minutes at 300 yards and 30 minutes at 500 yards, and probably 80.5 minutes at 1000 yards. He checked the two shorter ranges by firing, later, and found his paper readings were correct.

Using his graph again, with the trajectory curve now established by his shooting, Albree read off the elevations required for all unfired ranges. He also noted the left windage of his 100-yard, 200-yard and 600-yard zero adjustments and plotted the line of right drift for which that left-windage was necessary. This gave him all the dope for the following table: (Required elevation and windage are given in minutes of angle)

Range	*E.*	*W.*
100 (yds.)	7.50	0.0
150 "	9.25	0.5
200 "	11.25	1.0
250 "	13.75	1.25
300 "	16.50	1.75
350 "	19.50	2.00
400 "	22.75	2.50
450 "	26.00	3.00
500 "	30.00	3.25
550 "	34.00	3.75
600 "	38.50	4.00
650 "	42.75	4.25
700 "	47.50	4.75
750 "	52.50	5.00
800 "	57.75	5.50
850 "	63.25	5.75
900 "	69.00	6.00
950 "	74.75	6.25
1000 "	80.50	6.50

In his .3085 Bullette (predecessor of "Bull Pup") Albree had a one-hole group of 9 shots at 100 yards with lead-alloy bullet No. 311910 and a heavy gas-check load of No. 4227, with W.R.A. No. 120 primers, in his .30-'06 cases. The first shot, following the firing of jacketed bullets, landed low left from this 9-shot hole, which flier enlarged the total 10-shot group to exactly ⅞ inch. He fired this inch-minus lead-bullet group at Concord, Mass., on June 10, 1939. A Mr. Tobin was present. The target, in my possession, measures exactly ¼ inch, center to center, for the last nine shots.

Albree had obtained some lead-alloy bullets (Ideal No. 308344) from H. Guy Loverin, but was disappointed with their accuracy in his .30-'06 rifle until he tried heavy charges of No. 4227. His basic load was 21.0 grains. His top load was 24.0 grains. His most accurate load was 22.5 grains. With 20.0 grains of No. 4227 he fired a 10-shot group at 200 yards. It measures 3¾ inches, center to center. An interesting thing about this combination is that each added grain-weight of powder raises the impact 1½ minutes of angle, up to the maximum practical load (24 grains) which was accurate at 200 yards.

Albree tried and rejected the "Winged Bullet" long ago, because it was no more accurate than an arrow. He said this tail-feather "bullet" would have been more properly called a dart. By its nature it would be more successful as a quarrel propelled by a cross bow than as a projectile for firearms, rifled or unrifled. An exception which might be taken is a low-velocity firearm (under 1000 f.-s. m.v.) and a rocket projectile which might make the essential tail skirt or "dart-tail" practicable for gas propulsion from tubes. No rifling would be necessary, but our common terrific muzzle-blast from all current rifles would raise havoc with any tail-feathers unless curtailed or specially controlled.

* * *

"Swift-Varminter." Some history on the .220 Swift comes from G. L. Wotkyns, who had his early experimental rifle work done by Adolph Lukes of Berkeley, Calif. Wotkyns says this was late in 1933 before he had met J. B. Sweany. Lukes was a superb workman and made a number of beautiful bullet swages for Wotkyns. The latter called his first development the "Swift" and sent the outfit to Western Cartridge Co., for their laboratory test. He was using No. 3031 powder, before shooters knew about it, and his 6-caliber 46-grain bullets developed 4000 f.-s. m.v. in his 23½-inch W.R.A. Hornet barrel on the Model-1903 action. This ultimately resulted in our standard Western-Winchester .220 Swift.

Wotkyns supplied his Lubaloy-jacketed home-swaged bullets to J. B. Smith before the latter went into the bullet business. They were tried in the "Swift-Varminter" which ultimately became the Gebby-Smith ".22 Varminter." Regarding the Wilson Arrow, Wotkyns said it differs from the usual wild-cat in that factory cartridges cannot be fired in Arrow chambers, but Arrow loads can be fired in .220 Swift standard chambers. That would make it less desirable than the many wild-cats which follow the Kilbourn idea of permitting use of factory ammunition in the same chamber. Also the Arrow ammunition is probably too deep-seated to throat well in the standard factory rifle.

* * *

Stunts. William Dresser of Bay City, Michigan, suggests a way of revitalizing old leather or breaking in new stiff rifle slings. Take them all apart and work in neat's-foot oil thoroughly by working the leather until it is fairly soaked. Then actually soak it in a bucket of water for two or three days. Dry with a cloth upon removal and it will remain supple without soiling clothes from excess surface grease. Wearers of Sam Browne belts, leather suspenders and shoulder holsters over white shirts should appreciate this tip.

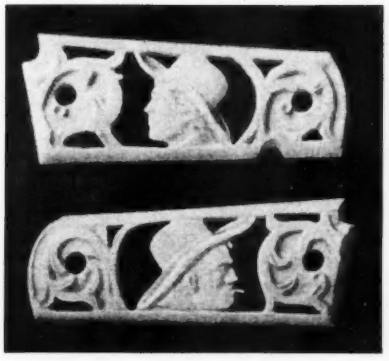
Andrew L. Forbes, of Inspiration, Arizona, had an inspiration when he failed to remove rust pits from his Krag receiver with emery cloth. He had a carborundum stone worn hollow from axe grinding and he finished shaping its concave on dry brick until it matched the convex receiver of his pitted Krag. Then he worked on the receiver with it, washing off the metal with water as soon as any glazing started. Very soon he had a highly polished surface ready for blueing and all pits were gone.

When Mr. Leopard attended our annual meeting he told me he used ordinary oakum for common blueing jobs in his gun repair work. Now comes a card from Private B. C. Felsberg, saying he employs the lowly onion for the same purpose. He just rubs it on the steel for patch blueing and gets a black color, particularly useful for "unglaring" bright front sights promptly.

* * *

E. L. Rice, the Krag-sight man, sent in one of his adjustable barrel bands for trial. It is an open ring of spring steel with a threaded stem and slotted control nut. It looks like a question mark. I polished it inside and forced it into position on my barrel. Then I drilled a hole through my hollow detachable-swivel seat, grooved a seat for the band inside the forestock, and put the rifle together; less than an hour's work in the average home, or about 20 minutes in an equipped workshop. Tried by range firing it performed well with a snug adjustment of the nut. Being rounded and narrow this band is very neat on the gun.

SHOWING BOTH SIDES



TRADE DOPE

The Gunroom Booksellers, formerly of Chicago, have moved to North Castine, Maine, which is their present address. They have helped many shooters obtain rare catalogs and out-of-print books. They are still in the market for unusual shooting catalogs, military manuals and outdoor books. Proprietor Allen P. Wescott sent me recently **"Barlow's Small Arms Manual,"** which is the nearest approach to the British Textbook now available, and also their latest book list. It is the first one from Maine and comprises 167 items. Friend Wescott explained he moved to the dooryard of Maine's hunting country partly for sentimental reasons, his family having originally settled there back in 1760.

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Stoeger Arms Corporation have sent in some interesting trade literature. One is their 24-page stapled "Supplement Price List" applying to their catalog No. 34 of 1942 and 1943. Another is a little pocket catalog called a "Gun Maintenance Manual". It covers cleaning kits, stock polisher, leather paste, oil finish, lead and nickel remover, barrel grease, cleaning solvent, gun bluers, gunstock blanks, stocking tools, targets and pasters. Perhaps most timely of all is the "Special Used Gun Price List No. 2" which includes domestic and imported pistols, revolvers, rifles, shotguns, field glasses, binoculars and rifle scopes. A special purchase application form is included as well as a page of general information about the purchase of those new products which are free from federal restrictions.

* * *

South Bend Lathe Works are out with a new 8-page Turret Lathe catalog covering their operations, construction features, attachments and accessories.

Elwood Epps has sent in his list of used guns from Clinton, Ontario. This includes shotguns, handguns, rifles and a few other items which should interest our Canadian readers.

* * *

Announcements. Martin B. Retting of Shokan, N. Y., asks all who have claims against him to present them immediately as no business will be transacted by him after December 31. He is entering the Service.

The gun shop of the Mashburn Arms Company has been closed because Art Mashburn has gone into war work at Tulsa. He will continue to deal in firearms in spare time only.

* * *

Claude E. Roderick, of Monett, Mo., is closing out his fine stock of personal arms, because increased shop work leaves no time for shooting. At last contact he had only five guns and one barrel remaining besides some accessories. Ask him for his List No. 57.

* * *

A. O. Niedner, famous old-timer, suffered a broken leg and arm in an automobile accident and is recovering in a Milwaukee hospital, according to a letter just received from Dave Lanagan, Jr. Friends who may wish to write should address their letters to Mr. Niedner at St. Luke's Hospital, Milwaukee, Wisconsin.

LETTERS

E. M. Polk, who writes in the November number under the title "Inverted Posts," evidently has the trouble in seeing his cross hairs which I have had to overcome. When looking through the edge of an eye glass lens, one sometimes gets a prismatic effect which makes it impossible to focus both hairs of a telescope sight at the same time. If he wishes to use cross hairs for target work, I think he can do so by having the frame of his glasses bent so that the shooting eye lens is brought close to his nose and nearly at right angles to the line of vision when shooting. This should bring the line of sight near to the center of the lens. I can no longer see iron sights and could do no prone shooting without this trick.—W. H. W.

* * *

Gallery Suggestion. In considering the problem of Cpl. M. O. R. of the Minnesota State Defense Force, in the October issue of THE AMERICAN RIFLEMAN, concerning Gallery Zero for the M-1917, I suggest the use of two targets, one above the other. Using the lower target for sighting and the upper target for scoring, they would eliminate any changing of rifle sights for their indoor shooting.—I. E. W.

* * *

Pedersen Reloads. I have a supply of the .276 Pedersen ammunition and expect to get a rifle soon to shoot this ammunition. My barrel is a 7-mm. Winchester Model-70 fitted to a 98-Mauser action. You state in the RIFLEMAN that 3- to 6-inch groups at 100 yards is about what to expect—it must be the most inaccurate cartridge ever made. However, what I want to know is what kind of a lead-alloy bullet would you suggest for this cartridge. I want a load to shoot at 200 yards into a 3- or 4-inch group. I have plenty of primers and powder and have ordered reloading tool parts for this shell. I don't expect to use the lead gas-check bullet for hunting; would want around 2200 f.-s. velocity. Have 2400, HiVel No. 2, 4227, 4198, 4320, 3031, 4064, 4350, Pyro D.G., I.M.R. 25 and I.M.R. 17 powders. Please advise me what lead-alloy bullet to use.—J. C. C.

Answer: In your 10-inch 7-mm. barrel, I believe you will get some good accuracy with the lighter 7-mm. bullets in your .276 Pedersen cartridge. For a lead-alloy gas-check bullet I would recommend the Ideal No. 285448 which weighs 125 grains. If you cannot get a mold you could probably get some expertly-cast bullets of this type from H. Guy Loverin, Lancaster, Massachusetts.

In the .276 Pedersen, on which no data is available, you would have to develop your own charges. I believe you will find for your heavier loads that you can use 26 grains of 3031 or 25 grains of HiVel No. 2, which should give you extreme velocity. For normal gas-check velocity use around 18 grains of No. 2400. In between, at the 2000 f.-s. level, your 4198 and I.M.R. No. 25 powder should be excellent. With these two similar propellants your charges should run between 17 and 21 grains weight.

I do not believe the .276 Pedersen cartridge is inherently inaccurate. It is merely difficult to stabilize its extremely refined bullet which is almost perfectly streamlined. It requires a very quick twist or a very high velocity in the 7-mm. Magnum type of cartridge for the 10-inch twist. On the other hand, your 10-inch twist will be better for lead-alloy bullets and you should get some very fine accuracy with the combinations, suggested above. In a 9- or an 8-inch twist the .276 Pedersen cartridge is giving groups as small as an inch at 100 yards to some shooters. In the 10-inch twist it has given us accuracy about as good as the .30-'06 of the same grade. The handloads which have given near-minute groups were 23 and 26 grains of No. 25, respectively, behind 175- and 139-grain 7-mm. bullets.

* * *

Pyro D. G. Loads. Please put me right on the following items:

No. 1. What harm is there in keeping old Pyro or 1918 ammunition?

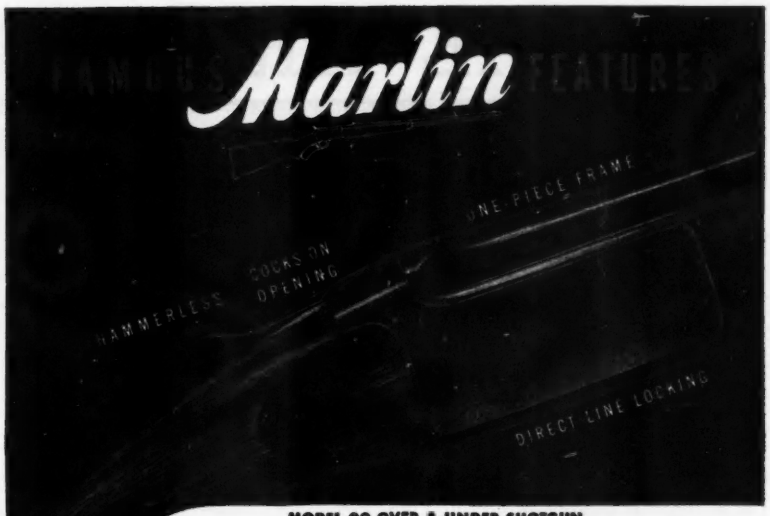
No. 2. Last year I merely substituted Winchester 110-grain .30-30 bullets in U. S. C. Co. 1918 loads, seating the bullets only 1/16 inches in the case. On first trial I made a 5-shot group of 1¼ inches at 120 yards in a scope-sighted Enfield. I never expect any greater accuracy in any load, but I'll have to change it because of ricochets. Using Pyro and an Ideal No. 5 micrometer measure, what would be a safe and fairly accurate load for the Winchester 110-grain bullet? For the Remington 110-grain bullet? For the 80-grain .32-20 Winchester bullet?

No. 3. What is the correct load of Pyro for the 8-mm. with the 236-grain bullet?—E. P. McG.

Answer: Old Service ammunition deteriorates more quickly in the case than in its contents, although sometimes the powder deteriorates and decomposes giving off a gas which pops open the cartridge from internal pressure, but with very little excess force, so that there is no danger attending the phenomenon. As the powder breaks down it becomes weaker as a rule, and in salvaging Pyro D. G. it should be sifted to remove the dust or very fine particles before weighing out the charges. There is no danger in shooting the old ammunition in a good rifle, even though the cases are split at the necks. Sometimes such cartridges even give very good accuracy, but they should be segregated and not fired with uncracked cases in the same lot, or group.

In the .30-'06 the best load of Pyro D. G. behind the .30-30 Winchester 110-grain bullet is 50.0 grains weight, which develops 3000 f.-s. muzzle velocity. This is a maximum load and you can use the same charge behind the 110-grain .30-'06 bullet as well, but with less effectiveness on account of its tougher bullet. The .30-30 bullet is designed for 2600 f.-s., and should be very effective at 3000, giving practically no ricochets on impact. The 80-grain bullet will also stand 3000 f.-s., although sometimes it strips in the bore and fails to reach the target. It would be better to use the Service charge behind this bullet, which is between 47 and 48 grains Pyro D. G.

In the 8-mm. Mauser behind the 236-grain bullet the maximum load of Pyro D. G. would be 42.0 grains weight. Maximum loads must be accurately weighed and approached with caution, always from a lower level.



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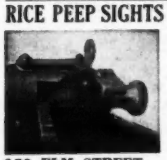

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RIFLE: WINCHESTER .348, PLAIN MODEL, like new, shot 5 times, sheepskin case, 100 rounds ammunition. Price $75.00 F.O.B. First certified check to receive the outfit. Carl H. Lester, Jr., Old Quarry Road, Upper Montclair, New Jersey. 12-42

FOR SALE: MATCH TARGET, HAND CARVED Heiser holster, perfect, $65.00. Model 40 Winchester, sheepskin case, 3 boxes of shells, perfect, $80.00. Bauer Down Jacket, large size, new, $15.00. Colts S.A. 32-20, 7½ inch, very good, needs blueing, $18.00. Ray Lankford, 230 W. 6th Street, Mt. Carmel, Illinois. 12-42

REMINGTON AUTO M-11, 12 GA., 28" MOD. Barrel, action perfect; Wood, very good, sheepskin case, $68.50. M-75 Winchester Target, perfect, extra 10 shot clip, sight inserts, $45.00. Barnet Adelman, L.S.U. Box 8136, Baton Rouge, Louisiana. 12-42

FOR SALE: COLTS OFFICIAL POLICE 38 SPEcial 5" blue, perfect, $55.00. W. W. Fowler, Greenville, S. C. 12-42

PARKER TROJAN, 12 GAUGE, 26 AND 30 INCH barrels. Good condition. Melville Mehrhof, Little Ferry, New Jersey. 12-42

LARGE STOCK OF AMERICAN AND European Antique Arms. Send 10¢ coin for latest 9th edition catalog, featuring the important Dr. Buck collection. Antique arms wanted. We buy single pieces or whole collections. Fair prices paid. Kimball Arms Co., Woburn, Mass. tf

ENGRAVED, MANNLICHER STYLE, .30-06 Mauser. Double set trigger, Redfield sights, fancy grade, checkered, cheekpiece stock, White Line recoil pad. About perfect. Make offer. 30 Remington Auto, receiver sight, cheekpiece, target stock, semi-beavertail forearm. Excellent. $80.00. Krag 22 inch barrel sporter, select grade Monte-Carlo style stock, windgauge receiver sight. Very good, $50.00. Chromium and pearl 25 Auto Colt. About excellent, $25.00. S. & W. blue 32 Safety Hammerless, 4 inch barrel, about excellent, $20.00. 38 Colt Lightning, refinished, 3 inch barrel, $15.00. G. B. Gaumer, 4028 Parrish, East Chicago, Indiana. 12-42

NEW GUNS: H. & R., U. S. R. A. 22 CAL. PISTOL, 7½" bbl., $32.00; Remington 121A Fieldmaster 22 Cal. slide-action Rifle, $32.00; Winchester bolt action single-shot 22 cal. Rifle, $8.00; (used) Colt's Single-Action .45, 7½" bbl., extra 5" bbl., belt and holster, over 550 rounds ammo., $60.00; Colt .38 Auto, with 550 rounds ammo., two holsters, extra clip, $55.00; Western Arms 20 Ga. Double (new) never fired, $25.00. Ammunition: 52 .38-55, $4.00; 14 .30-30 Rem. auto-loading, $1.12; 20 .32 Special, $1.60; 20 .22 H.P., $1.50; about 30 .32-20 (rifle) @ 5¢; 50 .32 Win. self-loading, $2.00. Stamp. W. M Abbott, Box 185, Wilton, N. H. 12-42

NEW H. & R., 5 SHOT, 20 GAUGE, $20.00. (Buy a bond with the difference.) Hershey's, Orrville, Ohio. 12-42

29S SCOPE, PERFECT IN, V.G. OUT, $11.00; .380 Remington, V.G. in, good out, $18.00; Ideal .30 Luger tool, complete, $9.00; beautiful Luger, .30, $75.00 (write for description); H. & R. .38, 1904, $4.00; .30 Luger shell resizer, $1.50; 800 .30 Luger bullets, resized, lubricated, $6.00. A. R. Halley, 1737 Hildacrest, Huntington, W. Va. 12-42

ITHACA "FIELD GRADE" 12 GA., RIGHT modified, left full, excellent condition, with heavy leather case and cleaning rod, $30.00. Money order only. D. Brink, 10 Esmond Pl., Tenafly, N. J. 12-42

BINOCULARS 20X52, $75.00. SAVAGE 16 Automatic, $45.00. Wollensak Sportglasses, $10.00. .30-06 empties, ¾¢. Hi-Standard B, 6¾", L.R., $25.00. K. Lockwood, 411 Chesnut, Leavenworth, Kansas. 12-42

SMITH & WESSON 45 ARMY 1917 REBLUED cylinder, barrel very good, holster, two clips, $30.00. H. Lundgren, 143 West 29th St., Bayonne, N. J. 12-42

22 WINCHESTER HORNET TARGET RIFLE: empty shells, 22 Hornet, 32-40, 38-55, 1¢ a piece. Chas. J. Jordan, Hermann, Mo. 12-42

WINCHESTER 12-20 25" FULL CHOKE, matted rib, beautiful polished circassian walnut stock and fore-end, pistol grip, excellent, few worn blueing spots, sole leather carrying case. Eighty dollars. Binocular prism 8X30 DeVair, both central and individual focusing, zipper leather carrying case, perfect. Sixty dollars. James D. Snyder, Kendallville, Ind. 12-42

COLT S. A. A. 4¾" CALIBER 45 AUTO. EXcellent outside and mechanically, bore rough but serviceable, $30.00. Another in Cal. 45 Colt, $27.00. Colt .45 Automatic, excellent, $45.00. Springfield as issued, re-heat treated receiver, nickel steel bolt, bore slightly rough, otherwise excellent, $40.00. Jess Berger, Drumright, Okla. 12-42

No More "*Auction*" Ads

Buying and selling through The Arms Chest has increased tremendously in recent months, due to the scarcity of new equipment and to the willingness of N.R.A. members to share what they have, in excess of their needs, with their fellow shooters.

There is danger in this increased activity because it attracts, to The Arms Chest, some who would take advantage of existing conditions to demand exorbitant prices for their goods behind the screen of "sold to highest bidder" ads.

This is not frequently the case but, to protect our members and keep The Arms Chest for the shooters, the following policy has been adopted.

Starting with the January issue, CLOSING DATE December 5, no classified *for sale* ad will be allowed to appear unless a set price is specifically stated.

MAUSER 98, BEAUTIFULLY ENGRAVED, CAL. 7 X 57 MM, 27 inch solid matted rib barrel, solid ramp front sight, double leaf rear, double set trigger, Mannlicher type bolt, highly figured circassian stock, shot 18 times, condition excellent, price $250.00. Chas. J. Fajen, Stover, Mo. 12-42

SPRINGFIELD RIFLE PARTS: EXTRACTORS, $1.50; ejectors, cutoffs, mainsprings, $.50 each; followers, cocking pieces, $.75 each; sears, $1.00; screws, pins, etc., too numerous to list. S. & W. 1917 new barrels, $7.00; cylinders, $6.00; grips, $1.00; hammers, triggers, sears, etc. Colt 45 Auto parts, magazines, $1.50; grips, $1.75 pair; pins, screws, springs, etc. 150 grain 30-06 bullets, $12.50 per 1000. No orders less than $1.00. E. S. Burrell, 717 Wyndmoor Ave., Chestnut Hill, Philadelphia, Penna. 12-42

TWO PARKER VH GRADE SHOTGUNS; Recasehardened and refinished by factory last winter. Minimal use since. Both perfect inside, excellent outside. Stocks measure 14¼ X 1-9/16 X 2¾. 16 Gauge Gun with 28" barrels bored improved cylinder and modified. 12 gauge gun with 30" barrels bored modified and full. Price $90.00 each. One Winchester Model 12, 20 gauge, Skeet Gun, solid raised rib and Cutts Compensator with tubes. Stock 13¼ x 1½ x 2½ with homemade oil finish. Perfect inside, excellent outside. Price $70.00. Dr. R. J. Ackart, #1 Stadium Road, Charlottesville, Virginia. 12-42

D.W.M. .30 LUGER, 3⅝", VERY GOOD, $30.00. 1917 Colts. 45 Colt cyl., reblued, good, $22.50. Ballard Rifle, .22 L.R. Heavy 52 barrel. Blocks only. Very good, $20.00. .270 Winchester Carbine barrel, excellent, $10.00. Remington, C. & B. 36, pocket, fair, factory alteration, 200 cartridges, $15.00. Ballard Action, good, $7.50. Cast bullets #225438, $4.00 M. Accurate in Hornet. M.O.'s only. All F.O.B. Lloyd Swarthout, 1521 Washington, Boise, Idaho. 12-42

COLT MT WOODSMAN, PERFECT, REGULAR and special grips, $60.00. Winchester 54 .30-06 and ammunition, $55.00. Stamp for description. R. Slagle, Cleveland Ave., Marion, Ohio. 12-42

MAUSER .30-06, RAISED RIB, D.S.T., Engraved beautifully, 4X Hensoldt scope and mounts, all new, leather cases, $250.00. William Tell, extra hand made grips, excellent, $85.00. Triple Lock .44 silver plated, excellent, $65.00. Stamp for list of Colts, Smiths, Lugers, Krags and Krag bolt parts. Life Member. Captain R. M. Greenslade, 131 Princess Pass, San Antonio, Texas. 12-42

ANTIQUE AND USED FIREARMS. SEND 5¢ for list. H. A. Brand, 1008 Ingalls Bldg., Cincinnati, Ohio. 1-43

COLT SERVICE MODEL CONVERSION 22-45, floating chamber, 22 long rifle, very good outside, excellent inside. Winchester 74 Short Automatic, perfect, except for scratches on stock. Colt 25 Automatic, good to very good. Colt 41 D.A., 2¼" Bbl., good to very good. Best cash offers. Money back guarantee. Stamp please. Wm. E. Beard, 723 East Main, Clarinda, Iowa. 12-42

18 CANS BULLSEYE $1.00 PER CAN. 9000 #2½ Rem. Primers $5.00 per 1000, sold in combinations of 2 cans Bullseye per 1000 primers; 4000 F.A. #70 Primers, $2.75 per 1000. WANTED—Schmitt Dies and Bullet Seaters for #24 Tool, state caliber and price. Glen S. Mock, 129 N. Euclid Ave., Indianapolis, Ind. 12-42

WINCHESTER 52 STANDARD BARREL, FACtory sights, sling and Mossberg Scope, good condition, $30.00. Woodsman Match Target, two extra clips and holster, excellent condition, $50.00. Mauser bored .300 Savage with sling, good condition, $25.00. Argus Scope with stand, like new, $55.00. Ortgies 32 Chrome plated, holster, very good condition, $20.00. R. R. Wallace, Carmel, Indiana. 12-42

WINCHESTER CUSTOM BUILT MODEL 21 Double, 12 gauge, 28" improved cylinder and modified. Straight oiled stock, standard measurements, pad. Single trigger, beavertail fore-end. Moderately engraved. Initials F.W. on slightly rubbed trigger guard, otherwise gun perfect. Shot 200 times. One of last built by Winchester before Government, restrictions. Price $200.00. Fred Wehman, 111 Meeting Street, Charleston, S. C. 12-42

M70 WINCHESTER BULL GUN, .30-06, LYMAN 48 rear, 77 front, scope blocks, sling, fired less than 100 rounds. Perfect inside and out, $125.00. M52 Winchester Heavy Barrel, Lyman 52 Extension, 77 front, latest model. Perfect inside, excellent outside, $50.00. Trades considered. A. J. Griffin, 24 Del Terrace, Meriden, Conn. 12-42

FIREARMS FOR COLLECTORS, PRINTED, illustrated catalog #7, 1,100 items, $1.00. Large descriptive list 20¢. Far West Hobby Shop, 406 Clement, San Francisco, Calif. 3-43

OFFICER'S MODEL .38, EXCELLENT CONDITION inside and out. 7½ inch barrel, Roper sights front, rear. Extra for above—5 inch barrel, factory sights. Take all for $75.00 cash. Robert Schuss, 90 Bryant Avenue, White Plains, New York. 12-42

How owners of .22 cal. rifles can help win the war

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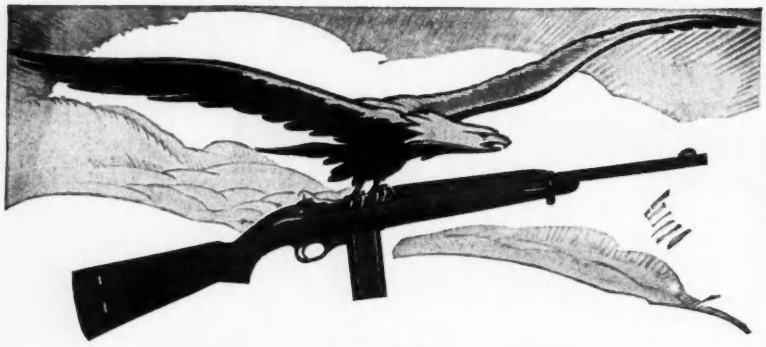

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IDEAL NO. 3 TOOLS: 45 AUTO; 38 AUTO; $6.50 each. Dahlgren Bayonet and Scabbard, $15.00. Ames Box Lock Pistol, good, $22.50. U. S. Powder Flasks 1837, 1854, Each $7.50. 1776 Brass Powder Flask, $17.50. Bannerman's 1907 Catalog, $3.00. 58 C.F. Brown-Merrill Rifle, good, $10.00. 58 Springfield M1842 Cadet Musket, V.G., $12.50. 1/10 Scale Model. 15" M/L Seacoast Cannon. Iron 40 lb. $12.50. 1¼ bore model Civil War Mortar, $10.00. Ideal molds, #308329, 308244, fine, $4.50; 358246. new, $5.50. Bond Double Mold 45 Colt, fine, $5.50. 32 Rem. R/F S.S. Rifle, No. 2 model, bore fair, rest fine, $14.00. 38 C/F Rem. S.S. Rifle, No. 2 Model, fine, $16.00. "London" 60X Telescope, $20.00. 58 C.F. Rem. Alteration Rifle, fine, $15.00. 69 Whitney Navy Rifle, Perc. Rifle, bayonet and scabbard, new, $20.00. Perc. Revolvers, all good; 36 Savage, $17.50; 28 Whitney, $13.00; 31 Pittsburg Cooper, $15.00. 44 H. & R. 6 in. D.A. Bulldog Revolvers, $6.50 each. 58 C.F. Snider-Springfield Alteration Rifle, good, $12.00. 58 J. Henry & Sons Civil War Rifle, fine, $15.00. Original Bisley Colts: fine 45. 7½, $50.00; 32 Long Colt, $45.00. 80 Cal. 12 Ga "Gibbs" S.S. Elephant Rifle, fine, $75.00. American Eagle, Squeezer grip safety Luger, fine, $50.00. Savage 45 Auto, rare, fine, $50.00. London Colt '49 Model, V.G., $16.50. Jack Plunkett, Valley Forge, Penna. 12-42

SELL: WINCHESTER MODEL 52 HEAVY BARrel latest model, scope blocks, no sights, factory grease, guaranteed perfect inside and out. 1500 rounds All-X-Match. Sell best offer received by December 15th. Joe Desaye, Turner, Montana. 12-42

PRIMERS: A FEW LARGE AND SMALL non-mercuric, non-fouling rifle primers, Winchester, Remington, and Western Mfg. #6½, 8½, 9½, 116, 115, and 120. Fresh stock. $10.00 per M. Fred C. Smith, Middlebury, Vt. 12-42

41 BOXES 762 RUSSIAN AMMUNITION, $1.25 box. Fine Krag as issued new sling bore perfect 4 boxes Remington Core-Lokt; $35.00. Winchester 1886 40/65 fair good action, $10.00. W. S. Tanksley, Bristol, Tenn.-Va. 12-42

H. & R. 22 SPORTSMAN 6 INCH, DOUBLE ACtion, perfect, $35.00. S. & W. Military & Police, 38 Special 4 inch, very good, $32.50. Winchester Mod. 12 28 ga. 28" modified, new, $56.70. Winchester 61 22 L.R. slide action, new, $34.25. No trades. J. H. Lee, Bloomfield, Iowa. 12-42

SELL: MODEL 12, 12 GAUGE WINCHESTER Pump, very good, $42.00. Model 92 25-20, good, $18.00. Henry Webelhuth, Monica, Ill. 12-42

$1.00 GOVERNMENT LEATHER HOLSTERS for 45 Automatic Pistol. Slightly used. Weil's Curiosity Shop, 12 Strawberry St., Philadelphia, Pa. 12-42

BARGAIN! REFLEX KORELLE MOD. II, F2.8, eveready case, filter, lens shade, extension tube, perfect, can't be told from new, $150.00. Wiley E. Miles, Lewellen, Nebr. 12-42

FOR SALE: TWO WINCHESTER 52, BOTH standard barrels, both folding leaf sights, one with 29S T-mount, standard stock not speed lock, perfect in excellent out, sling, $40.00. One with Lyman 5-A scope, latest target stock, speed lock, excellent to perfect, $70.00. W. W. Fowler, Masonic Temple, Greenville, S. C. 12-42

FOR SALE: BAUSCH & LOMB DRAWTUBE AS new. WANT—Winchester 70, 22 Hornet, standard 20 inch barrel, pay cash difference. Major Brudge Kyle, Hq. Sabine Section, Sabine, Tex. 12-42

.22-45 CONVERSION UNIT, EXCELLENT, CASE slightly scratched, $45.00. .44 Russian single action, 6½ inch barrel, rubber grips, reblued and action smoothed by S. & W., bore slightly pitted, otherwise excellent, $35.00. 1861 Navy Colt, tight, 70 per cent original finish, blemish on stock, small; nipples not original; engraving not distinct, $27.50. Richard L. Pearse, Box 448, Key West, Florida. 12-42

FOR SALE, CASH ONLY. BERGENSMEIS CARrying frame knapsack, $19.00 grade; Compac Aeroplane cloth tent and poncho, two man size. Pocket two man camp cook kit, all $25.00. 2 inch hunting belt by Hardy, 33 in. to shortest hole, hand basket stamped, $3.00; another, with handmade coin silver horse shoe buckle, 36½ inch to shortest hole, cost $18.00, sell $10.00. Hand carved holster 45 cal. 7½ inch barrel, $3.00. Hardy quick draw shoulder holster 38 Colt Auto, $3.00. Target barrel and pocket barrel .22 Fiala Repeating Pistol, perfect, $6.00 both. Complete parts 38 Smith Special Target Revolver (except frame, cylinder, and extractor) barrel perfect inside, needs blueing, make offer. Box of sights, discs and beads value $26.50, all $10.00. Four solid brass swivel oarlocks for open gunwale, $4.00 all. Rifleman 11 years, 1930 through 1941, 5 or 6 missing, $10.00. McClellan Cavalry Saddle, fair condition, $12.00. C. R. Arthur, Thebes, Ill. 12-42

THE MUZZLE-LOADING CAP LOCK RIFLE at $4.85 makes a fine Christmas Present. N. H. Roberts, Author, Goffstown, N. H. 12-42

38 COLT OFFICER'S MODEL, 6 INCH HEAVY Barrel, perfect, $55.00. Colt 45 Commercial Model, excellent, two extra clips, 200 rounds, holster, $50.00. John J. McDonald, 506 Greenwood, St. Paul, Minn. 12-42

BELGIAN BROWNING AUTOMATIC, ENgraved model, 12-28 Poly Choke, checkered stock, recoil pad, perfect inside, excellent out, $80.00. Winchester 218 Bee, new barrel, very good, $32.00. Zeiss 12x40 Binoculars, optically perfect. Excellent condition outside. Good leather case. $85.00. Zeiss 8x30 Binoculars, optically excellent. Enamel worn at edges outside. $55.00. WANTED—Excellent Ithaca 37, 12 or 16, 30" full rib barrel. Remington 241, Savage 6S-22 Rifles. P. T. Theodore, Rapid City, So. Dak. 12-42

ENFIELD AS ISSUED, EXCELLENT IN AND out. $75.00. No trades. E. A. Hawks, Gloucester, Mass. 12-42

BROWNING AUTOMATIC 20 GA. THREE SHOT, improved cylinder 26", brand new, $65.00. Colt Woodsman 6½", two clips, Sanderson grips, sheepskin holster, perfect, $45.00. Paul T. Nicholson, Sheffield, Ala. 12-42

45 COLT AUTOMATIC. 32 SMITH & WESson, brass barreled Blunderbus, Remington 10 gauge and 40-50 combination. Several antique guns and swords. Stamp for list. Fred Braucher, Box 62, Canfield, Ohio. 12-42

SELL: 75 SPORTER, 10X FECKER 1½". SLING, excellent, $90.00. Carl Zeiss 6x30 Binocular, perfect, $125.00. WANT—.22 Hornet and .45 Colt's Auto Ammunition. C. S. Morrison, Shelby, Miss. 12-42

12 GAUGE BROWNING, OVER AND UNDER, double trigger, 30" barrel, good condition, $103.00 cash. Norman B. Curtice, 1306 South First Street, Minneapolis, Minnesota. 12-42

SAVAGE 22 SPORTER, FINE, SLING, $25.00. Remington .380 Auto, good, holster, shells, $25.00. Univex Deluxe Iris Camera, case, excellent, $10.00. Ralph Drake, Courthouse, Osborne, Kansas. 12-42

EXCELLENT DIME-GROUPING NICKEL STEEL B. S. A. Hornet, $75.00. V. G., S. & W., D. A., .44 Russian, $30.00. WANT—Standard 52 and Spotting Scope. C. L. Eimer, 1106 Sergeant, Joplin, Mo. 12-42

FACTORY SECONDS RECOIL PADS $1.00, postpaid. Complete with screws for attaching. You save $2.25. Send outline of gun butt. Prompt delivery and satisfaction guaranteed. Incor Mfg. Co., Terminal Bldg., Youngstown, Ohio. tf

OFFERING COLLECTION OF HIGH grade cased double muzzle loading shot guns by famous makers. Also listing some desirable flint and percussion rifles in shooting order. Specify which list wanted. Stamp please. Kimball Arms Company, Woburn, Mass. tf

CAMP PERRY 22 L. R. 6", EXCELLENT, $35.00. S. & W. 22 L. R., single shot, 10", very good, $25.00. H. & R. 32 S. & W. short, nickel, good in, fair out, $10.00. Iver Johnson 38 short, hammerless, nickel, fair, $7.00. Greener double, 10 Ga., hammers, fine shooting condition, $45.00. Abercrombie & Fitch sole leather shotgun case for 30" bbls., was $40.00, used, $17.50. Stan Meyers, 472 Gramatan Ave., Mt. Vernon, N. Y. 12-42

$5.00 NEW GOVERNMENT FIBRE DESK Trunk with lock and partitions. Well built. Great for ammunition and pistols. Cost $30.00. Weil's Curiosity Shop, 12 Strawberry St., Philadelphia, Pa. 12-42

EXCELLENT .257 CUSTOM NIEDNER MAUSER, dies, cases, bullets, primers. Perfect 10X Jr. Targetspot. Perfect 52 Heavy Barrel. Very good 52 Sporter. 2 M EZXS. Want in trade or for cash, 70 Standard or Target .30-06. .280 Magnum Rifle and components. Allweather Alaskan. Edward Rosecrans, 59-35 157th Street, Flushing, N. Y. 12-42

H. & R., S. A. SPORTSMAN, EXCELLENT IN, good out, holster; B. & L. Draw Tube, excellent. Best offer over $50.00 by December 15th. Tom Linton, Camp Hill, Penna. 12-42

PERFECT .22 MAUSER VARMINTER. BISHOP target stock, detachable swivels, 26 inch heavy tapered barrel, blocks, $45.00. WANT—Jr. Targetspot. H. Cole, 7532 2nd Avenue, South, Birmingham, Alabama. 12-42

ENFIELD-WINCHESTER .30-06, CARBINE, FULL stock, Redfield sights. Excellent condition. Beautiful job. $42.00. Alexander Lash, 531 West 122nd St., New York, N. Y. 12-42

351 SL. WINCHESTER, GOOD TO V.G., $40.00. 35 SL. Winchester, V.G., $45.00. 35 Remington Model 14, V.G., $55.00. 300 Savage, fired 9 times, $55.00. 250-300 Savage Takedown, like new, $60.00. 30-06 Enfield Sporter, V.G., $45.00. 30-06 Rock Island Arsenal, V.G., $40.00. 30-30 Winchester Carbine, V.G., $27.50. Ithaca #4 12 Gauge Trap, Cutts Compensator, V.G., $60.00. 32 Colt Auto, ivory grips, new, $32.50. 32 Colt Auto, Walnut grips, new, $30.00. 380 Colt Auto, V.G., $30.00. 410 Winchester Model 42, rib barrel, new, $45.00. Lugers, good, $30.00. Lugers, V.G., $35.00. 380 Colt Auto, like new. $35.00. Guns wanted; give full details, lowest price first letter, save time. Deposit or M.O. Federal License #1819 (member, N. R. A.). L. T. Gibbs, 716 Kress Bldg., Houston, Texas. 12-42

WINCHESTER 75 TARGET. STANDARD FACtory sights. Year old. Excellent except initialed stock. $32.00. Dr. Milton M. Idzal, Sioux City, Iowa. 12-42

ENFIELD, AS ISSUED, PERFECT, $35.00. COLT Official Police .22, new condition, $45.00. Ed Betz, Life Member, 1510 S. Mint St., Charlotte, N. C. 12-42

WINCHESTER 25-20 REPEATER, 500 FACTORY cartridges, loading tool, bullets, $70.00. Remington 32 Automatic Pistol, new Lyman 438 regular mounts, shotgun primers, 8mm. cases, Western 380 cartridges. WANTED—Browning 12 Gauge receiver complete. Wm. Mansfield, 7617 Gannon, University City, Missouri. 12-42

PETER'S HIGH VELOCITY AMMUNItion: 20-gauge, 3 inch, $1.10 per box of 25: 2¾ inch, ⅝ ounce ball, 20 gauge, $1.20 box of 25. Remington .25 Automatic Ammunition 3½¢ a round. Auto-Graflex Camera, Bausch & Lomb Zeiss-Tessar 4x5 lens, series Ic, cut film magazine, 4x5 picture, leather case, $65.00. Will pay cash for Super Targetspot. J. W. Rush, 1105 Adelaide St., Normal, Ill. 12-42

ENFIELD AS ISSUED, EXCELLENT, SLING, $35.00. Krag as issued, long, excellent inside and mechanically, good outside, bayonet, sling, $25.00. Rock Island "Springfield", "C" stock, sling, excellent to perfect, $60.00. Colt .45 Government model, Commercial, excellent to perfect, $55.00. Jess Berger, Drumright, Oklahoma. 12-42

SELL: WINCHESTER 64, 219 ZIPPER WITH 98A peep, inside excellent, outside very good, box cartridges, $40.00. R. F. Griffin, 38 Ocean Ave., Salem, Mass. 12-42

THE ORIGINAL SIGHT-EXCHANGE, BOX J, Paoli, Penna. Gun Sight Specialists. Mail us your old sights and tell us what you want. 12-42

BAUER "BLIZZARD" DOWN JACKET, EXCELlent, medium size, $10.00. Brown's Beach Jacket size 36, excellent, $2.50. Miniature Trap and 120 Targo Clay Birds, $2.50. Naramore's "Handloaders Manual", $2.00. Richard I. Boyce, Roundup, Montana. 12-42

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For over 43 years sport-loving Americans have turned to Wollensak for high quality lenses. Prism Binoculars . . . Field Glasses . . . Telescopes... Microscopes... Magnifiers—all represent Wollensak skill and precision in manufacture.
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COLT'S 38 SUPER AUTO, PERFECT, 6 BOXES Kleanbore High Speed, $70.00. Winchester Model 12, full, 12 gauge, factory new, $62.00. Ralph Dittman, 427 W. Bender Rd., Milwaukee, Wisc. 12-42

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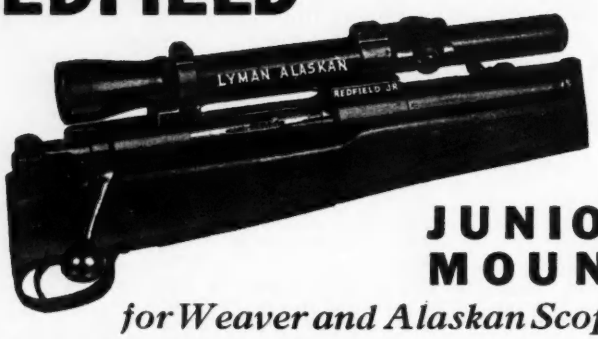

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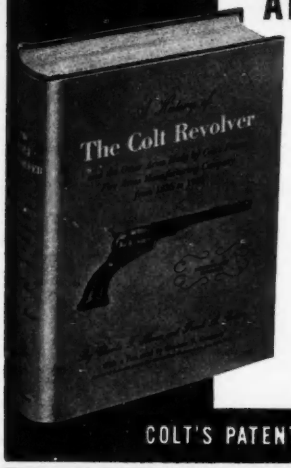

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38 OFFICERS MODEL, HEAVY BARREL, Roper and factory grips, perfect, M.O. $60.00. F. E. Groff, Pavonia, Ohio. 12-42

EXCELLENT, 38 SPECIALS. COLT O.P. 4", $40.00, Army Special, $37.50, Police Positive, $32.50, S. & W., M. & P., 4", 5", $40.00, Colt 45 Auto, $40.00, 45 New Service, $35.00. S. & W., M. & P., 45 D.A., $35.00. Savage 250-3000, box ammunition, $40.00. Remington M14, 30 Cal., $40.00. Stevens Hoffman K-Hornet, 100 rounds ammunition, D.S. triggers, very good, $30.00. Winchester 22 L.R. Musket, Lyman peep rear, Parker Hale front, perfect in, 250 rounds ammunition, $25.00. Stamp for list. Mashburn Arms, 918 S. Oswego, Tulsa, Okla. 12-42

M30S REMINGTON 25 CALIBER, 48 REAR, custom unfinished cherry stock, perfect, 40 cartridges, $55.00. M54 Winchester 30-30 Sporter, excellent to perfect, box cartridges, $55.00. Winchester M94 proof-steel Carbine 30-30, perfect, 26 cartridges, $41.50. M53 Winchester take-down 25-20 nickel-steel, excellent to perfect, box cartridges, $34.50. M52 Winchester Standard, 48J, 17A, speed lock, stainless barrel, checkered stock, perfect, $58.00. Winchester M72 Tube magazine .22, perfect, $27.50. S. & W. Olympic .22 Pistol, moulded grips, perfect, $47.50. Hi-Standard M-H.A. .22 L.R., perfect, $47.50. 21 J. Elgin Railroad watch, perfect, $42.50. Clarence Uhl, R. 1, Wooster, Ohio. 12-42

IDEAL #10 TOOL, 30-06, SINGLE ADJUSTABLE chamber, resizer, $7.00; Ideal #4, 38-40, $4.50. Prescription Balance, $13.00. Money orders only. No trades. Claude R. Jeffries, 137 Nevin, Lancaster, Penna. 12-42

COLT 45 AUTOMATIC, GOV'T. MODEL, 3 clips, holster, 100 rounds ammunition, excellent, $50.00. Lyman 48FH Round Receiver, perfect, $12.00. Luke Pettit, Cartersville, Ga. 12-42

SELL OR TRADE

REMINGTON MODEL 11-A, 12-30, FULL, NEW, unfired, $65.00. Colts Officers Model 38 Special, new, perfect, 4 inch barrel, Clark holster, $55.00. Krag as issued, fair, $12.00. Winchester S. S. 30-40, No. 3 nickel 24" bbl., blocks, very good, $15.00. Sterling 6 Volt Siren, 5 inch diameter, mechanically perfect, looks poor, $15.00. WANT—Unertl 1½X, not over 10X, with mike mounts. M. E. Martin, 505 N. Edwin St., Champaign, Ill. 12-42

250-3000, 28 INCH NIEDNER BULL BARREL, Springfield action, cheek pad, Josiam anti-flinch butt, 1½ inch Fecker 8 power target scope, very good condition, 933 extra bullets, mostly 117 gr., about 250 loaded shells, B. & M. bullet starter, about 800 No. 70 F.A. primers (not guaranteed), $150.00. 30 Cal. Luger, two magazines, very good, $30.00. 1 case 1200 '18, .30-06, inspected, good condition, best offer. P.O. money order only. WANT—Late Lyman Alaskan All Weather Hunting Scope, 8mm Eastman magazine loading movie camera. E. Clark, 539 No. C. St., Muskogee, Okla. 12-42

S. & W. MODEL K .38 SPECIAL, 6" BARREL, very good to excellent, $35.00 cash. T. H. Beard, R.F.D. #1, Bridgeport, Conn. 12-42

COLT .45 S. A. A., 7½" BARREL, KING SIGHTS, honed action, excellent in and out; also .45 Cal. mold, bullet sizing chamber, 138 ctgs., Lawrence holster, $65.00. WANT—Win. .220 Swift or 3 bbl. combination gun. 9mm D.W.M. Luger 8" bbl., good condition in and out, Franzite grips, $35.00. WANT—Woodsman, for Hi-Speed Ctgs. or 9mm Luger with 4" bbl. Steve Lakcsik, Jr., 1923 S. Scott St., South Bend, Indiana. 12-42

CAMP PERRY COLT, EXCELLENT OR BETter, $35.00. WANT—Model 75 Winchester. Must be perfect. H. I. Simonds, 807 Edgehill Road, Jacksonville, Illinois. 12-42

MOSSBERG SCOPE, 4 AND 8X, CLICK MOUNTS, $12.50. Bisley Colt, good, $22.50. Enfield new 200 ctgs. Offer. WANT—Lovell components. Ernest Swafford, Ft. Scott, Kansas. 12-42

SUPER TARGETSPOT 12X, EXCELLENT. treated lenses by Mt. Wilson Labs., more light less glare, $90.00. Will trade. Want Hensoldt, Zeiss, or Alaskan; also Enfield. Floyd E. Day, Mt. Wilson Observatory, Mt. Wilson, California. 12-42

12 GAUGE CHE PARKER 34" FULL, EXCELlent, $225.00. .22 Woodsman 6½", 3 extra magazines. Excellent, shot for sighting only, $45.00. Will accept B. & L., Zeiss of equal condition part purchase price on Parker. All letters answered. P. C. Thede. 1002 Mills Bldg., El Paso, Texas. 12-42

WINCHESTER 94 30-30 CARBINE #1002828. stainless steel barrel, inside excellent, outside good. $30.00. Smith Crown grade 12 double, 30" full. S.S.T., ejectors, Hawkins pad, P.G. standard stock. excellent, $225.00. WANT—30 Remington Automatic, automatic shotguns. C. H. Cubbedge, Orlando Florida. 12-42

S. & W. .44 SPECIAL 6½ MILITARY VG, MURAD Magnum Grips 12 boxes factory ammunition, $65.00. Colt .38 Police Positive, VG, 100 cartridges, $28.00. S. & W. .44 Russian Target 7" Spurred Guard "Call" patridge front, adjustable rear, 125 cartridges, excellent out, $22.50. 2-45 ACP holsters, $1.00 each. Model 99 Savage .22 H.P.-TD, VG, trunk case, 80 rounds ammo., $42.50. Express prepaid. WANT—Officers Model .22 recessed head. Excellent 63. N. Cole, Box 5, Williams, California. 12-42

BEST OFFER. 5,000 116 PRIMERS. 2000 others for even trade 8½. 70 Hornet action and barrel. 23D K-Hornet, 330S with floating dot, Pacific dies, 75 Sporter, 330S with dot. B mounts. Boxes 25-20SS U.S. cartridges. 500 Hi-Power 70 gr. bullets. WANT—Very accurate 70 Varminter or 250-3000 and .375 Magnum. Pacific dies. Henry Murff, 2520 18th Ave, North, Birmingham, Alabama. 12-42

REMINGTON MODEL 11 12x28 MODIFIED good, $55.00. Winchester Model 12 20x25 full. excellent, $52.00. Savage 99G 250-3000 new barrel, $50.00. Remington Gamemaster 35 Rem. excellent, $65.00. Sharps & Hankins Navy 50 R.F., good, $10.00. Woodsman 4½ inch excellent Heiser moulded holster. $50.00. Colt Army 45 D.A., excellent, $40.00. Paragon M33 Movie Camera 16 mm f3.5 Cine-Velostigmat lens, new. $50.00. Early U.S. Peace Powder Flask, good, $12.50. Many others. List. Stamp. Ed Howe Coopers Mills, Maine. 12-42

ONE BRAND NEW ENFIELD RIFLE BARREL. $8.00. .357 S. A. 5½" excellent to perfect; swap for 38-44 Heavy Duty S. & W. in same condition Newton D.S.T. No. 350 rebarreled to .270 Win. by P. O. Ackley, Redfield Jr. base, perfect, make offer Emil McConnell, Route 6, Mine Hill, Dover, N. J 12-42

MAUSER GEW, LESS SIGHTS. WINCHESTER 74, 22 Auto, excellent. WANT—Movie Camera 8mm, 330-440 Weaver. C. E. Streed, 3344 Beard N., Minneapolis, Minn. 12-42

REMINGTON 28" FULL CHOKE BBL. WANT—Remington 26 or 28" full choke with rib. Excellent. Pay difference. Seven complete years Rifleman for Benjamin air rifle or Crossman. Old style Remington 37 stock, $4.00. A. J. Cook, Delaware, Okla. 12-42

HEBERLEIN VIOLIN, HORSEHIDE CASE. $375.00. WANT—Latest 52 Sporter with scope: K-22; Ace; Officer's Model; Outdoorsman; excellent to perfect. R. B. Van Buren, 510 MacQueen St. Peoria, Illinois. 12-42

.44 REMINGTON CREEDMOOR; FALLING Block Frank Wesson; Sharps Side Hammer; Bullard Repeater; .32 and .38 Ballards; '66 Winchester; .44 Engraved Bisley, Colt New .30 pearl. Sell or trade for High Grade Cameras or Lenses. Howard Keene, Kittery, Maine. 12-42

SMITH SPECIALTY GRADE 20, S. S. T., EJECtors, shows wear but good condition. Ithaca 4E Trap Gun, excellent. Trade either for modern sporting guns of like value or best offer. WANT—Winchester 410 Pump, Skeet Model. Leica equipment. Capt. Paul Murphy, Station Hospital, Camp Roberts, Calif. 12-42

PERFECT S. & W., K-22 MASTERPIECE. WANT —Perfect M-70 2-R, or Hornet. Tools, Bullets, Primers. Si Sharp, Slatyfork, W. Va. 12-42

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CUSTOM 54 WINCHESTER HORNET LEFT hand bolt action, cost $200.00, excellent, $100.00. S. & W. Straightline, Schwinn Paramount Special racing bicycle, $50.00. Andrew Spina, 155 William St., Towanda, Penna. 12-42

$20.00 REMINGTON FOURSOME SHAVER, AS new, $15.00 or trade for Mossberg "Spotshot" or similar scope. Carson Williams, Parkland Hospital, Dallas, Texas. 12-42

350 HORNETS, $16.00. 2500 .22 LR-HS. 365 Clean 1918-06, $12.00. Felix Phillips, 1508 Clover, Amarillo, Texas. 12-42

32 S. & W. 3 IN. SAFETY HAMMERLESS, EXcellent, $30.00. WANT—44½ or Hi-Wall Action, or S.S. Hornet. King Gloshen, Mercer, Mo. 12-42

LORD ELGIN #12, 21J WATCH. WANT—8" 9mm Luger and ammunition. S. & W. Detective .38 or what? W. Staudte, 5238 Milwaukee Ave., Chicago, Ill. 12-42

SEDGLEY 30-06 LEFT HAND BOLT DELUXE Sporter. Excellent. Extras. $135.00. WANTED —7mm Mauser barrel. '88 Bolt Head. Chas. Mezaros, 1952 Paulding Ave., Bronx, N. Y. 12-42

VERY GOOD OR BETTER REMINGTON AUTO M241 Long Rifle, $23.50 or trade for S. & W. Kit Gun. J. B. King, R. 5, Morristown, Tenn. 12-42

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TRADE—NEW REMINGTON ENFIELD AS ISsued, 80 rounds 1938 Frankfort, Bayonet and Scabbard, Parker B.B. rod, patches, sling, extras for Trap Double or O. & U. that will meet N.R.A. Excellent. Possibly pay small difference. State all particulars first letter. Dan. Cline, Route #1, Baker, Louisiana. 12-42

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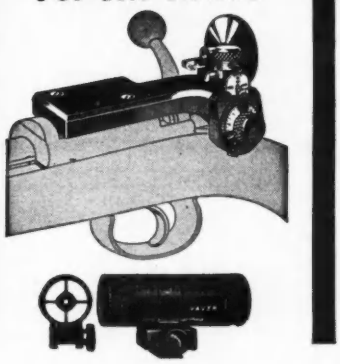

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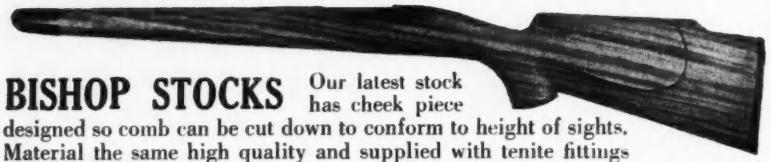

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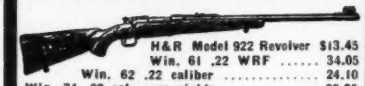

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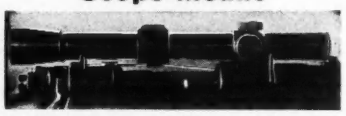

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WILL TRADE 12 GAUGE WINCHESTER MODEL 24, 5 boxes of Western Shells, excellent condition; for 22 or 38 Colt Officers Model in excellent condition. Alfred Zumbrum, 305 High Street, Berne, Indiana. 12-42

TRADE—NEW REMINGTON ENFIELD AS ISsued except front sight guard removed small file mark rear sight ear for best offer .22 Long Rifle Ammunition, preferably from defense organization. J. W. Eatman, Cuero, Texas. 12-42

TRADE—COLT'S WOODSMAN, 6½ INCH, ONE year old, perfect. 330 Weaver, T-5 mounts, scope perfect, mount scratched. Both for perfect Lyman Target Spot 8X, ¼ min., 1⅛ objective. E. A. Pruet, R. #3, El Dorado Springs, Mo. 12-42

TRADE—EXCELLENT WINCHESTER 70 K-Hornet for equal .257 or .270. Letter. M. Rardin, 2204 N. Arlington, Indianapolis, Ind. 12-42

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HEAVY BARREL 52, MARKSMAN STOCK, Vaver sights complete, front and rear, very accurate, practically new; trade for 52 Sporter, same condition. Gun mailed first for inspection. Matthew Bufwack, Niles Post Office, Niles, Ohio. 12-42

HAVE SEVERAL THOUSAND EACH OF the following shotgun primers: #33 Winchester, Remington #33, Winchester #209, Winchester #4 and Remington 57. Will exchange only for size .210 primers, either rifle or pistol or size .177. Stamp please for reply. M. Pecha, Acushnet Ave., Worcester, Mass. 12-42

BAUSCH & LOMB 6X30 BINOCULARS, BEST offer: 52 Winchester, perfect, scope rib. Trade for 52 Sporter. 22 Rimless Magnum with components or? Pay difference. WANT—.30-06 Bullets. Stephen Smith, Sonnette, Mont. 12-42

WANTED

WANTED—ANTIQUE FIREARMS; POWder flasks, gun books. Will buy entire collections, cash. James Serven, Box 1777, Santa Ana, Calif. tf

WANTED—COLT .45 AUTOMATIC, VERY GOOD to perfect, by Army physician awaiting overseas service; not furnished gun by Gov't. Member Capt. Alfred Miller, 33rd Station Hospital, Camp Rucker, Ala. 12-42

WANTED—WALTHER PISTOL; .22 ANSCHUTZ Free Pistol and 9mm Webley Automatic. Arthur Leidesdorf, Elberon, New Jersey. 12-42

WANTED—HIGHEST CASH PRICES PAID for Target Pistols, Revolvers, Rifles and Antique Guns of all kinds. Ship for estimate. Public Sport Shops, Dept. R-55, 13 S. 16th St., Philadelphia, Pa. 12-42

WANTED—45 CAL. AUTO. PRIMERS AND Powder. Any amount. 2 or 3 line metal checkering tool. A. L. Terhaar, 6425 Cross St., Jacksonville, Fla. 12-42

WANT—.22 AUTOMATIC COLT MATCH PIStol. Perfect. Cash. Leslie Miller, Merchandise Nat'l. Bank, Chicago, Ill. 12-42

WANTED—35 CALIBER GAS CHECKS; ALSO K-22 and Woodsman, or what have you? State price and complete description first letter. George N. Lathrop, Bristol, Vermont. 12-42

WANTED—STOEGER'S 25 SHOT MAGAZINE for Colt .45 Automatic; magazine for .32 Sauer. Also "Arms and Man" magazines before 1920. Arthur Leidesdorf, Elberon, New Jersey. 12-42

WANTED—.25-21 AND .45-70 LOADING TOOLS, moulds, empties, or loaded black powder cartridges; Ideal tool, moulds, .38-55, .30-40, .30-06; Kentucky, F/L or Percussion, .31 or .38 with moulds, in shooting condition. Captain Howard J. Elliott, Pine Camp, N. Y. 12-42

WANTED FOR CASH—PRISM BINOCulars, Field Glasses, Microscopes, Sextants, Surveyors and Builders Levels. Give description and prcie in first letter, all mail answered. Big Ben Mercantile & Loan Co., 179 Third Street, San Francisco, Calif. tf

WANTED—VAVER MICROMETER SIGHT NO. 5237, or Redfield Olympic micrometer sight for Model 52 H.B. telescopic height. Will pay list price. Sight must be perfect. Frank Heymann, Route #1, Burns, Kansas. 12-42

WANTED—BRITISH SHORT MODEL LEE-ENfield, Model of 1903, Caliber 303, ten shots as issued. Any mark. (Mark III* preferred.) State condition and price. C. J. Trzcinski, 2349 Geimer Street, Detroit, Michigan. 12-42

WANTED—COLLECTIONS AND SINGLE specimens of Antique and Modern Firearms, Powder Flasks and obsolete ammunition. Fred Braucher, Box 62, Canfield, Ohio. 12-42

WANTED—REMINGTON .22 LONG RIFLE, 500 each: Kleanbore; Kleanbore hollow point; Palma; High Speed; High Speed hollow point—all outside lubricated. Self, not resale. Age, price? Member Wm. Sims Bunn, Nashville, North Carolina 12-42

WANTED—#8½ OR #115 N.C.-N.M. PRIMERS, #9½ or #120 N.C.-N.M.; up to 1000 each. For personal use. Will pay top price. R. A. Hughes, 35 Morrill Ave., Waterville, Maine. 12-42

WANTED—ONE TO FIVE POUNDS HI-VEL #3 Powder. Any quantity 60 grain or 87 grain H.P. or S.P. .25 Cal. jacketed bullets. State make and type. Will pay your price. Robert Bley, Gateville Road, Bound Brook, N. J. 12-42

WANTED—COLT AND S. & W. REVOLvers, Automatic Pistols. 30-40 Krag Cartridges. 45-70 Cartridges, Springfield Rifles, Enfield Rifles, Krag Rifles, Cameras any make. Warshal's, First-Madison-BB, Seattle, Washington. 2-42

WANTED—COLT DETECTIVE SPECIAL, FAIR to perfect. Ammo. Pvt. Neil Terhune, A.S.N. 17122634, 760th School Squadron, Chico Army Flying School, Chico, Calif. 12-42

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WANTED—GUNS—ALL KINDS. 22 CAL., High Power, Revolvers and Shotguns. Give best cash price and accurate description first letter. The Jaymac Co., Jackson, Mich. tf

WANTED—38 SPECIAL S. & W. OR COLT, 6 inch barrel, prefer target sights. Paul Pale, 366 E. South St., Wilkes-Barre, Penna. 12-42

WANTED—.22-.45 CONVERSION UNIT, IN PERfect to excellent condition. Peter Hamilton, 902 S. Second St., Champaign, Ill. 12-42

WANTED—PARTS FOR MILITARY RIFLES. And Relics. Also Sporting Rifles. Cash or trade. State your wants. All letters answered. T. A. Greeley, 67 Palm Street, Newark, N. J. 12-42

WANTED—CONVERSION UNIT .45 TO .22 Caliber. Good condition. Reasonable. Earl Briggs, 58 Magnolia Ave., Lynn, Mass. 12-42

WANTED—TWENTY GAUGE SLIDE OR AUTOmatic, 28-30 inch, ventilated or matted rib, full or modified. Any standard make considered, Remington preferred. Also consider Over and Under. Also want S. & W. K-22 Revolver, .357 Magnum, Woodsman Master Target. Give full description, lowest cash price. E. B. Averill, P. O. Box 212, Austin, Texas. 12-42

WANTED—MAUSER RIFLE OR ACTION (MUST be short action with set triggers). Sell: 44½ R2 heavy solid Diller barrel, custom stock d.s. triggers, exceedingly accurate (500 R2 components with rifle only). J. P. Garland, Office 4414, Department of Justice Bldg., Washington, D. C. 12-42

WANTED FOR CASH — SHOTGUNS, Rifles, Pistols and Revolvers. Can use all makes and types. Describe guns fully in first letter, state price, all mail answered. Big Ben Mercantile and Loan Co., 179 Third Street, San Francisco, Calif. tf

WANTED—WEBLEY MARK II SERVICE AIR Rifle, Cal. 177. Good to excellent mechanically. Describe condition in and out. Halford Lembke, 318 Oceanic Bldg., Seattle, Wash. 12-42

WANTED—WILL PAY PREMIUM FOR EACH Lyman Alaskan Scope, Colt 22 Conversion for 45 Auto and Woodsman 6½ good. Major H. D. Taylor, Old Times Building, Seattle, Wash. 12-42

WANTED—M-70 HORNET WITH OR WITHOUT scope; Hi-Standard for shorts; shotgun scope. Sell: Old heavy Sharps good, $12.50. D. E. Larson, 1142 S. Williams, Denver, Colo. 12-42

WANTED—FOR CASH: AMMUNITION, any quantity, all calibers. Write. Public Sport Shop, Dept. R-55, 13 S. 16th Street, Philadelphia, Penna. 12-42

WANTED—.22 COLT MATCH TARGET WOODSman; also .38 Colt Officers Model Target six inch Heavy Barrel. Excellent to perfect. Write details and prices. Chas. B. Cross, Jr., 215 Park Road, Portsmouth, Virginia. 12-42

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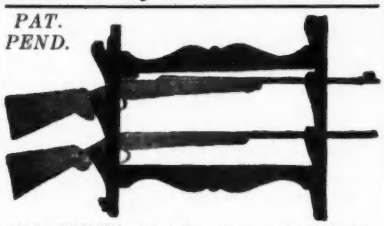

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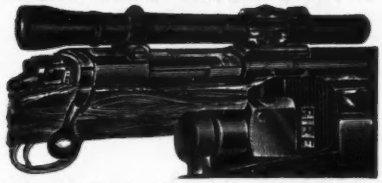

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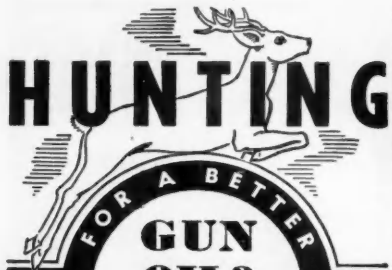

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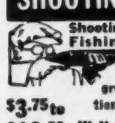

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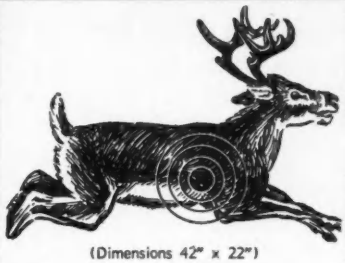

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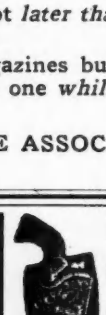

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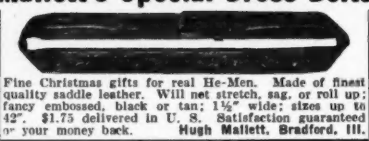

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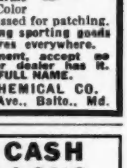

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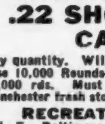

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EXCELLENT SUPER-POSED, O. & U. BROWNing, twin selective triggers, selective ejectors, recoil pad, $90.00. Krag Carbine (not cut down) excellent out, very good in, Weaver scope, $27.50. 6¾" Woodsman, excellent, extra grips, $35.00. Frank Kreisher, 216 Hendricks, Indianapolis, Indiana. 12-42

JEFFREY-MAUSER .333, TAKE-DOWN, Lyman 1A on bolt, #6 and Ivory bead front sights, heavy leather, full length case, 40 cartridges, $100.00. Kirkwood Bros., Inc., 23 Elm St., Boston, Mass. 12-42

TRADE RIFLES: .40-65 MAR. AND .44-40 WIN. Both good. WANT—.38-56, .40-72, or .405. Calvin Goddard, 3533 Quebec, Washington, D. C. 12-42

WINCHESTER MOD. 52 H.B., #44,770-B, Marksman stock, Vaver dial 35-Mielt, Vaver 35-EBB barrel band and 35-LS light shade, Redfield No. 63 Globe front, 8 inserts; fired less than 600 rounds; excellent to perfect, about $95.00 value for only $64.00. B. & L. Prismatic #218529, 19.5X, 12.8X, 26X, 36.5X eyepieces, B. & L. leather case and B. & L. tripod, cost $92.00 1937, excellent to perfect, used few times, all for $67.50. No trades. Money orders or C.O.D. inspection. WANT—Colt National Match .45, prefer target sights; also want .22-.45 Service Conversion Unit and Government Model .45 Automatic for use as officer in U. S. Signal Corps; pay cash top prices. Will sell: Miniature Speed Graphic, Zeiss Tessar F-3.5 lens, Compur Rapid 1-400, deluxe C-JR Speedgun, Kalart coupled Rangefinder, film pack adapter, 6 double film holders, condition practically as new, about $225.00 present value, only $162.50. Life Member. James Bunney, c/o Gibson City Courier, Gibson City, Illinois. 12-42

SELL, SEVERAL HUNDRED .30-06 28-33 issue, $4.50 per C. 45 Auto cartridges, 28 issue. $4.50 per C. BUY—Cylinders only, for Colt Lightning 38 and S.A. 44-40. F. A. Baker, Donnelly, Minn. 12-42

SELL OR TRADE, COLTS GOVERNMENT 45 Automatic, very good, $50.00. Colts Commercial 45 Auto, good, $35.00. Winchester 12, 12-28, very good, $40.00. Savage 12 Automatic, excellent, $45.00. WANT—Officers 38 Special S. W. 22 Masterpiece. Automobile hand tools. Money order please. Charles Wilkins, Luke, Md. 12-42

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REMINGTON 30-S, 25 REMINGTON, 48, 17A, V.G., $68.00. Custom Springfield, 48, ramp, checkered, horn tip, cheekpiece, comb, C.N. bolt #1283525, scope blocks, QD swivels, perfect, $1.25. Mod. 81 Remington 35 Rem., QD swivels, never fired, $93.00, including 40 rounds. Genuine Mauser 7.63 Pistol bought Stoegers, Heiser holster, cartridge belt, ammunition, 10 & 20 shot detachable magazines, perfect, $95.00. Target Luger 9mm, 8" bbl., holster, excellent, $45.00. 45 Auto, perfect, $40.00. Colt N.S. 45, V.G., $30.00. Detective Special, perfect, $25.00. Hi-Standard D and 38 OM-HB, make offer. WANT—Good or better Reising 22 Auto. M. C. Colliere, 710 Dartmouth, Silver Spring, Md. 12-42

FOR SALE: WINCHESTER 53, 25-20 RIFLE, good, $25.00. M. H. Huffman, Dunlap, Illinois. 12-42

CLEANUP SALE BALANCE! $2,000.00 worth fine Handguns, Rifles, Shotguns, Large List Components, Ammunition. Both lists 10¢ coin. Member. Gordon Joslyn, Greenfield, Mass. 12-42

TRADE—ENFIELD, EXCELLENT IN, V.G. OUT. Underwood Standard #5 Typewriter, V.G. Colt .25 A.C.P., V.G., blue worn, all for Ex. 70-06-48. WANTED—Krag barrel and action; 06 resizing block; Univex projector. R. B. Stevens, 1917 W. Olympic, Los Angeles, Calif. 12-42

FOUR HIGH GRADE BIG GAME RIFLES FOR sale, or trade for equal value in twelve or twenty gauge shotguns. Ernest Daniels, 661 Kennsington Terrace, Lake Forest, Ill. 12-42

KRAG CARBINE, VERY GOOD, REMODELED stock, Pacific sight and 60 rounds ammunition, $25.00. F. F. Klenk, 1132 E. 36th St., Baltimore, Md. 12-42

WILSON OFFERS NEW GUNS: 99 SAVage, 250-3000; 141 Remington .35 Cal.; 81 Remington .35 and 300 Cal.; Winchester 94 .30 and .32 cal.; L. C. Smith "Field" 12 Ga. 30" M.F.; Fox Sterlingworth 12 Ga. 30" M.F.; Factory list prices or will trade. Wilson's, 3082 W. 25th St., Cleveland, Ohio. 12-42

SELL, HIGH STANDARD E 6¾", FIRED 2 clips; Officer's Model heavy barrel, never fired; both factory perfect, with extra Pointer grips in sheepskin cases. Best offers by December 10th. WANT—Factory perfect 357 Shooting Master and ammunition; also perfect Marble's Trailmaker. Lowell S. Orth, 1425 El Campo, Dallas, Texas. 12-42

SAVAGE #740-C, 12 AUTOMATIC, SKEET, COMpensator, 3 tubes, excellent, $65.00. Remington 550, S-L-L R, Special King sights, excellent, 1 M. HP shorts, 1 M. Long Hi-Speeds, all $39.50. Winchester 94 *Deluxe* Carbine 30-30, 4 boxes Hi-Speed, perfect, all $50.00. Beautiful Lefever, Grade A #5, Skeet 410, 26 inch, ST, BT, ejectors, excellent, $60.00. P. R. Lilly, Valdosta, Georgia. 12-42

SPRINGFIELD SPORTER, STAR GAUGED, fancy checkered French walnut stock, Vaver rear, recoil, sling, very good plus, $87.00. 200 excellent 38 N.M. ammunition, $17.00. Perfex 35mm candid f3.5, excellent, $41.00. S. Saeter, 1858 Belmont, Manitowoc, Wisc. 12-42

WANTED—OVER-UNDER TWENTY OR LIGHT double twenty, must be new condition. M. D. Winter, Brooklyn, Wisc. 12-42

.32 REMINGTON AUTOLOADER, GOOD CONdition with eight boxes of 170 grain Kleanbores, $67.20¢ 380 Colt, excellent half box shells, $25.00. F.O.B. H. Dale Weeks, Belle Fourche, S. D. 12-42

OFFICERS MODEL, 7½" 38 SPECIAL, good, $42.50. Colts and Remington Cap and Ball Revolvers, 36 and 44 calibers, good, $14.00 each. Thirty low price antique pistols, others. G. Crozier, Adams, N. Y. 12-42

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WANTED—RAW DEERHIDES, VERY POOR lever Marlin 22, Wollensak vari-power telescope. E Schmeling, Rockfield, Wisc. 12-42

WANTED—14 ENFIELD BAYONETS AND SCABbards. 20 Springfield Bayonets and Scabbards. 6 Prismatic Compasses. Captain Jack Roach, Box 1495, Kilgore, Texas. 12-42

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SELL: WINCHESTER .30-30 MOD. 94 CARBINE, like new, oil finished stock and forearm, sheepskin case and three boxes silvertips, $65.00 first money order. Also Lefever Nitro Special 16 Ga., 28 inch, full and mod. barrels, gun like new, $46.00. Richard McBride, 614 East Weatherford Street, Fort Worth, Texas. 12-42

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SEVERAL .45 COLT AUTOMATICS FROM $25.00 to $60.00; also .25, .380, .32 and .44 Colt Automatics and Revolvers from $18.00 to $30.00. For complete details write Elliott Gillespie, 4816 S. Aldrich Ave., Minneapolis, Minn. 12-42

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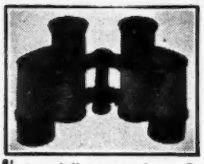

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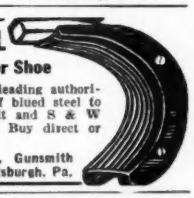

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WANT—HORNET CASES AND K-HORNET Cases. Herman Treptow, 209 South Main St., Milltown, N. J. 12-42

ANTIQUE PISTOLS, RIFLES, AND SHOTGUNS of all types. Also .41 dbl. bbl. Derringer, and saluting cannon. Further details and prices on request. Elliott Gillespie, 4816 S. Aldrich Ave., Minneapolis, Minn. 12-42

WANTED TO BUY—A GOOD GRADE DOUBLE in 24 gauge or 32 gauge, will consider 28 gauge. Write stating price, grade bore, barrel length, boring and condition. All letters answered. Life Member. Francis Raring, Pottsville, Pa. 12-42

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WINCHESTER, EXCELLENT, MODEL 12, 12 gauge, full, 30" barrel, solid rib, pad, for 3" shells, $63.50 cash. Leslie Keller, Belcourt, N. Dak. 12-42

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WANTED—.357 SMITH & WESSON MAGNUM, perfect, deluxe job preferred, about 4½-inch barrel. Will pay cash or trade following only for Magnum. Colt Detective Special, excellent to perfect; .22 Long Rifle Cartridges; Rifle & Pistol Powder; large and small Rifle Primers. Sell: Complete Potter Reloading Equipment for .38 Special, new condition, wadcutter mold. All inquiries answered. B. H. Biays, 7010 Exeter Rd., Bethesda, Md. 12-42

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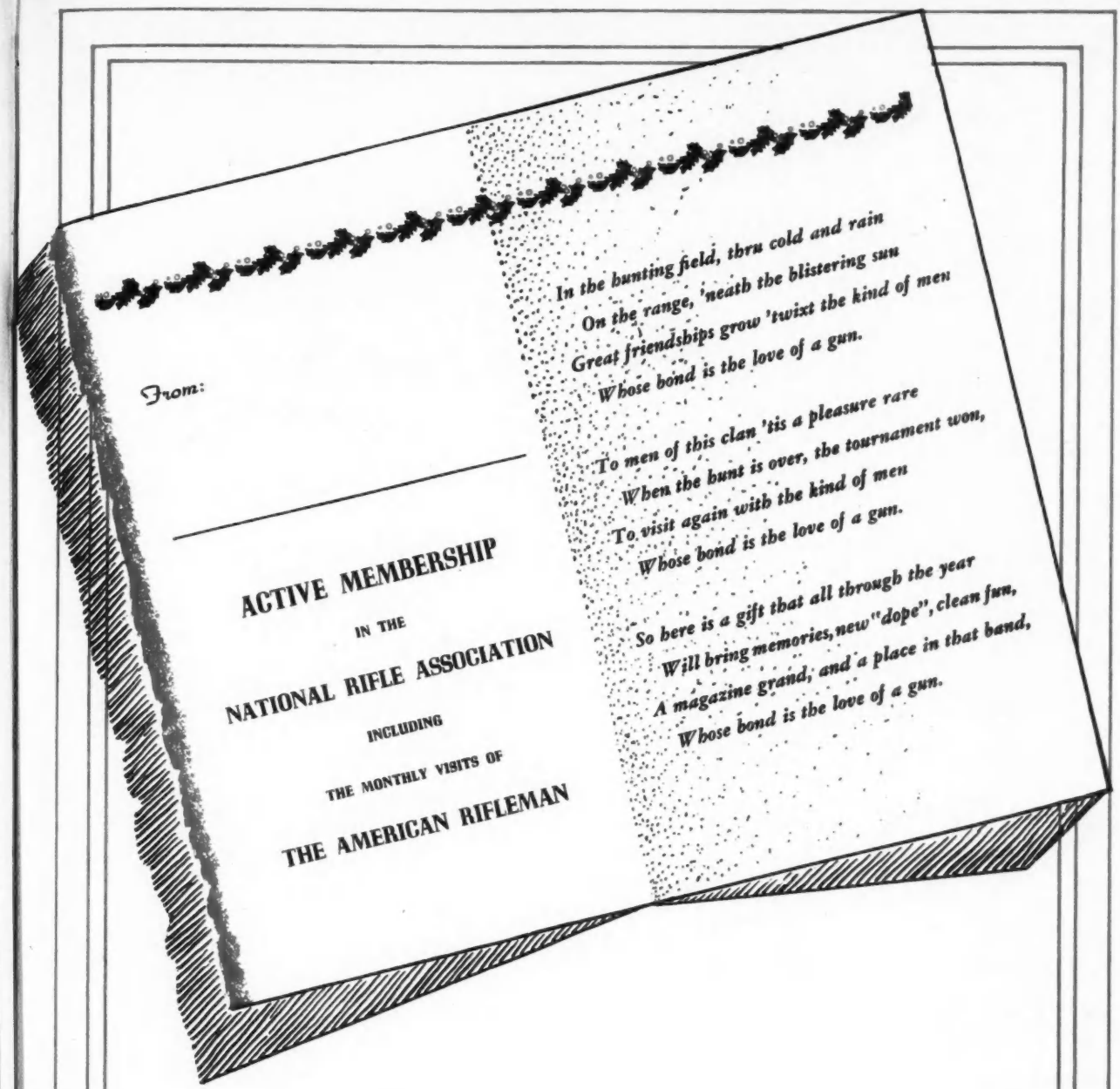
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So here is a gift that all through the year
Will bring memories, new "dope", clean fun,
A magazine grand, and a place in that band,
Whose bond is the love of a gun.

This Gift Card—

bearing your name, will be mailed to each sportsman whom you remember this Christmas with a Gift Membership subscription.

A similar card is also available for the Field & Stream combination.

Of course, the usual NRA membership requirements of patriotism and good citizenship apply to recipients of Gift Memberships.

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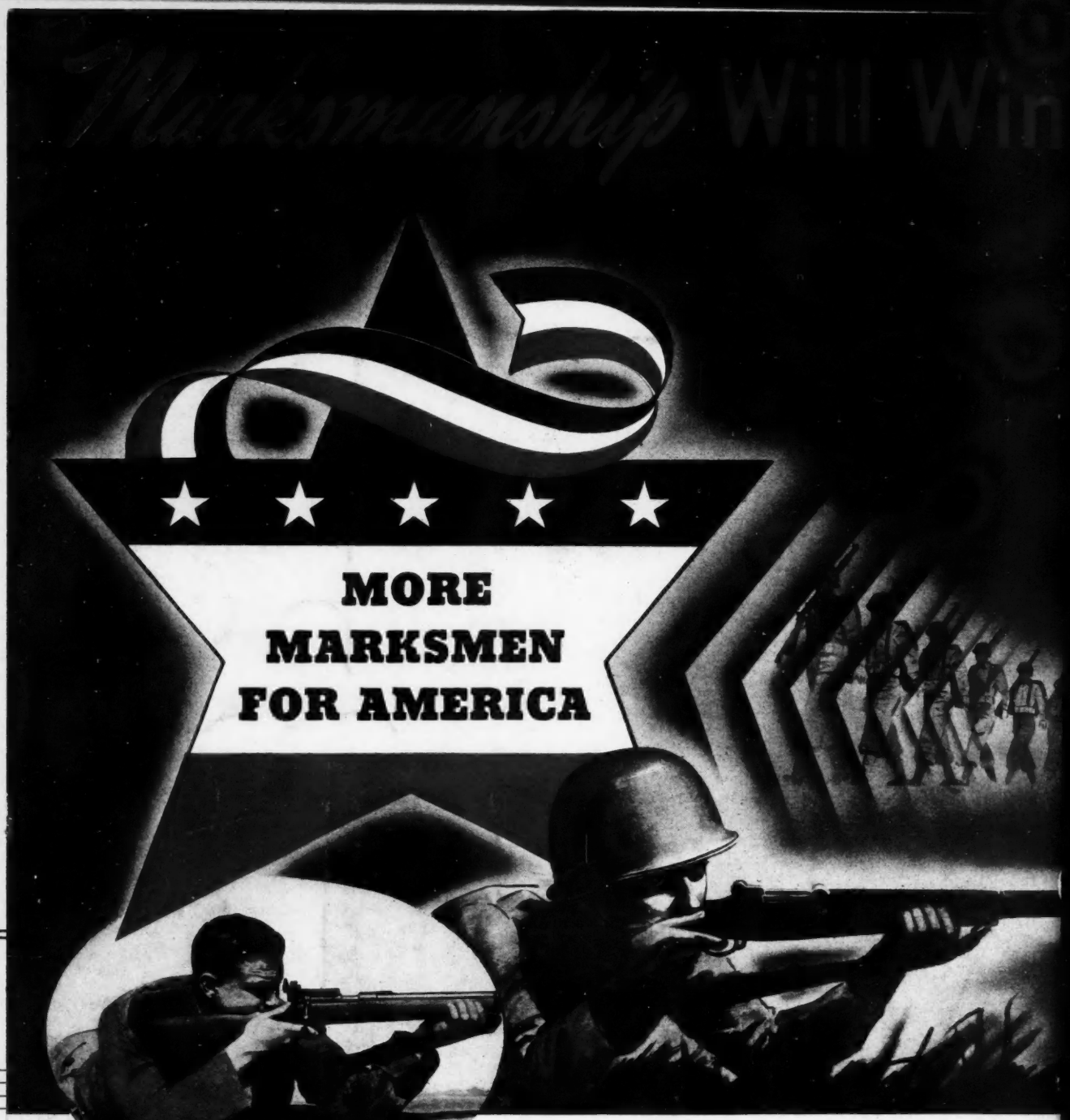

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